^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 194,460 (2024)	31-Oct-2022

1990Ka21 (also 1988Ka44): E=thermal neutrons were from the HFR of the ILL in Grenoble. Target was 20 mg enriched (97.5%) ^{164}Dy. γ rays were detected with a pair spectrometer (HPGe detector placed between two NaI(Tl) crystals) for primary transitions and GAMS1 and GAMS2/3 curved-crystal spectrometers for secondary. Measured Eγ, Iγ. Deduced levels. Primary γ rays measured in the region: 3524-5607 keV (total of 60 γ rays). Secondary γ rays measured in the range: 46.4-1899 keV (total of 890 γ rays).

1967Du05: thermal neutron beam was produced from the Munich reactor. Measured ce using magnetic spectrometer. Enriched (92.7%) target. Deduced conversion coefficients for secondary and primary transitions in the range: 22.3-5607 (total of about 200 transitions listed).

1967Ma25: thermal neutron beam was produced from the Karlsruhe research reactor FR2. Target was 100 mg enriched (92.7%) ^{164}Dy. γ rays were detected with a pair spectrometer of five NaI(Tl) crystals for high-energy transitions and a Ge(Li) spectrometer for γ rays from 600-keV to 2300 keV. Measured Eγ, Iγ, $\gamma\gamma$-coin. Deduced levels. Primary γ rays reported from 2452 to 5607 (total of 123 gamma rays listed with several indicated as uncertain). Secondary gamma rays reported from 613 to 2269 (total of 84 gamma rays, a few listed as uncertain). The gamma-ray intensities are given as relative values in three different energy energy regions, normalized separately.

1965Sc09 (also 1963Sc09): Measured Eγ, Iγ using curved-crystal spectrometer. A total of 220 gamma rays in the region 29.7-1257 keV. Enriched (83.2%) target.

1964Sh13: Measured Eγ, Iγ using Compton spectrometer consisting of four electron detectors and two gamma-ray detectors, coincidences recorded between Compton electrons and back-scattered gamma rays. Energies and intensities reported for about 70 gamma rays from 2552 to 5607 keV. Several other gamma rays in the range 885 to 2531 keV were unassigned. The intensities given by 1964Sh13 do not seem to be corrected for detector efficiency.

Others:

2005Ka33: measured cross section.

2005Su27, 2005KhZY: analyzed 2-quantum cascade $\gamma\gamma$ coin data, deduced level density, radiative strength functions.

1984Po21 (also 1984Po18,1984Po10): Measured $\gamma\gamma$, 2-quantum cascades. Others (analysis of 2-quanta cascades): 1999Bo14, 1999Su03, 1997Su29, 1989Bo16, 1985Po24.

1983Is04 (also 1984Pr03,1983Is05,1982Is05): measured Eγ, Iγ of primary transitions in the range 4067-5608.

1978An22: Measured $\gamma\gamma$(t); deduced half-lives of 180.9 and 184.3 levels.

1968Gr32: Compiled data from 1967Du05, 1967Ma25, 1967Bo31, 1965Bo40, 1965Sc09, also includes data from priv. comm. (1967Sh17) which gives primary gamma rays from 3708 to 5608, energies and intensities per 100 neutron captures for 29 gamma rays in the energy range: 5608 to 3685. Natural Dy target data mainly from 1969Ra10 and 1964Sh13 (some from 1965Gr34, 1964Pa21, 1959Dr75, 1958Sk59) are also listed from 109 to 5607 (132 γ rays assigned to ^{165}Dy).

1968Na21: Measured $\gamma\gamma$(t); deduced level lifetimes.

1967Bo31, 1965Bo40: Measured ce using magnetic spectrometer. Deduced conversion coefficients for secondary transitions in the range: 281-1072 keV in 1967Bo31 (total of 69 transitions listed) and 41.5-139.0 keV and 184.2-538 keV (total of 48 transitions listed). Enriched (75.5) target.

Others: 2001Ch38, 1991Hi23, 1981Se09, 1979Br25, 1973He15, 1969Ra10, 1966Ne06, 1966Hu04, 1966Ha34, 1964Pa21, 1964Ni03, 1963Mo18, 1962Vo02, 1959Dr75, 1958Sk59, 1958Gr12, 1952Hi50.

Additional information 1.

480.1 and 520.9 levels, both the J^π=11/2$^-$ levels proposed by 1965Sc09 have not been confirmed by 1990Ka21. The γ rays 119.41, 218.29 from 480 level and 183.32, 222.80 gamma rays from 520.9 level were not confirmed by 1990Ka21.

291.86γ (Iγ=0.003) from 628.8 level proposed by 1965Sc09 is not seen by 1990Ka21. A 291.23γ (Iγ=0.003) reported by 1990Ka21 differs by 0.5 keV from the level-energy difference.

84.41γ (Iγ=0.007), 87.73γ (Iγ=0.003), 119.41 (Iγ=0.004) from 657.99 level proposed by 1965Sc09 are not seen by 1990Ka21.

77.08γ (Iγ=0.008) from 705.9 level proposed by 1965Sc09 is not seen by 1990Ka21.

341.82γ (Iγ=0.040) from 911.9 level proposed by 1965Sc09 is not seen by 1990Ka21.

1059.9γ (Iγ=0.24) and 1110.0γ (Iγ=0.28) from 1218.4 level proposed by 1965Sc09 are omitted here since more precise energies from 1990Ka21 do not fit between the levels concerned.

^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05 (continued)

^{165}Dy Levels

Band assignments are from 1990Ka21.

E(level)[†]	J^{π}[‡]	$T_{1/2}$[#]	Comments
0.0[&]	7/2$^+$		
83.3952[&] *15*	(9/2)$^+$	<35 ps	
108.1554[a] *12*	1/2$^-$		
158.5888[a] *12*	(3/2)$^-$	1.8 ns *10*	
180.9230[a] *12*	(5/2)$^-$	2.5 ns *10*	$T_{1/2}$: $\gamma\gamma$(t) (1978An22). Other: 10.7 ns *35* (1968Na21).
184.2545[b] *11*	5/2$^-$	1.0 ns *1*	$T_{1/2}$: $\gamma\gamma$(t) (1978An22). Other: 1.1 ns *4* (1968Na21).
186.0946[&] *21*	(11/2$^+$)		
261.7706[b] *11*	(7/2)$^-$	<35 ps	
297.6837[a] *13*	(7/2)$^-$	<35 ps	
337.1632[a] *14*	(9/2)$^-$		
360.6306[b] *16*	(9/2)$^-$		
533.4930[c] *12*	5/2$^-$		
538.6349[d] *12*	3/2$^+$		
570.2611[e] *15*	(1/2)$^-$		
573.5847[f] *15*	(3/2)$^-$		
583.9965[d] *12*	5/2$^+$		
605.0960[e] *14*	(3/2)$^-$		
607.6246[c] *16*	(7/2)$^-$		J^{π}: from band assignment but not confirmed in other studies; (5/2,7/2)$^-$ in Adopted Levels.
628.8377[f] *15*	(5/2)$^-$		
648.9736[d] *16*	(7/2)$^+$		
657.9990[e] *14*	(5/2)$^-$		
702.892 *6*	(5/2$^-$,7/2$^-$,9/2$^-$)		E(level): probably a doublet with J^{π}=(5/2 to 11/2)$^-$ and (7/2,9/2)$^+$ (1990Ka21).
705.9105[f] *18*	(7/2)$^-$		
737.8578[e] *22*	(7/2)$^-$		
911.9730 *21*	5/2$^+$		
976.784 *7*	(7/2,9/2)$^+$		
1016.0752 *20*	(5/2$^+$)		
1080.0395 *16*	(1/2,3/2)$^-$		
1088.0107 *18*	(3/2$^-$)		
1103.0447 *16*	(3/2)$^-$		
1108.2008 *18*	(3/2)$^+$		
1135.8118 *28*	(5/2$^-$)		
1140.8661 *27*	(3/2$^+$)		
1158.1185 *21*	(5/2$^+$)		
1166.8920 *22*	(3/2)$^-$		
1174.9524 *26*	(3/2,5/2)$^-$		
1218.3547 *24*	(5/2$^+$)		
1256.502 *4*	(3/2)		
1309.301 *4*	(3/2$^-$,5/2$^-$)		
1320.810 *6*	(1/2$^-$,3/2,5/2$^-$)		
1337.103 *4*	(1/2$^+$,3/2$^+$)		
1376.3374 *30*	(3/2$^+$)		
1380.885 *4*	(5/2$^+$)		
1400.2735 *32*	(3/2$^+$)		
1416.3378 *19*	(3/2)		
1440.470 *15*	(5/2$^+$)		

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^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05 (continued)

^{165}Dy Levels (continued)

E(level)[†]	J$^\pi$[‡]
1444.721 *11*	(3/2$^-$,5/2$^+$)
1456.398 *5*	(3/2)
1464.8481 *24*	(3/2)$^-$
1479.1319 *23*	(3/2$^-$,5/2$^-$)
1482.060 *5*	(5/2$^-$)
1501.26 *24*	
1555.16 *23*	
1560.10 *22*	
1587.62 *30*	
1591.86 *22*	(1/2$^-$,3/2$^-$)
1623.25 *22*	
1631.91 *22*	
1634.60 *23*	
1648.3 *4*	
1671.14 *22*	
1693.89 *24*	
1730.43 *24*	
1754.88 *23*	
1770.76 *22*	
1795.85 *22*	
1814.48 *23*	(3/2)
1830.45 *22*	(1/2$^+$,3/2$^+$,5/2$^+$)
1834.55 *23*	
1872.67 *23*	
1875.80 *23*	(1/2$^+$,3/2$^+$,5/2$^+$)
1885.71 *24*	
1890.64 *24*	
1895.88 *23*	(1/2$^+$,3/2$^+$,5/2$^+$)
1915.46 *24*	
1943.82 *23*	
1962.82 *24*	(1/2$^+$,3/2$^+$,5/2$^+$)
1968.99 *24*	(1/2$^+$,3/2$^+$,5/2$^+$)
1988.21 *24*	
2007.54 *23*	(1/2$^+$,3/2$^+$,5/2$^+$)
2041.83 *24*	
2063.48 *24*	
2065.81 *24*	
2088.09 *24*	
2107.08 *24*	(1/2$^+$,3/2$^+$,5/2$^+$)
2112.65 *24*	
2160.39 *24*	(1/2$^+$,3/2$^+$,5/2$^+$)
2178.55 *24*	
2187.10 *24*	
2190.90 *24*	
2271.21 *25*	(1/2$^-$,3/2)
2475.80 *29*	(1/2,3/2)
2547.53 *25*	(1/2,3/2)
2610.04 *29*	(1/2,3/2)
2705.65 *25*	(1/2,3/2)
2765.37 *21*	(1/2$^-$,3/2)
2783.72 *29*	(1/2$^-$,3/2)
2793.15 *29*	(1/2,3/2)
2852.64 *25*	(1/2,3/2)
2874.44 *29*	(1/2,3/2)
2943.55 *29*	(1/2,3/2)
2982.74 *22*	(1/2$^-$,3/2)

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^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05 (continued)

^{165}Dy Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	Comments
3014.02 *25*	(1/2$^-$,3/2,5/2$^+$)	
3051.82 *25*	(1/2$^-$,3/2)	
3123.44 *29*	(1/2,3/2)	
3193.94 *29*	(1/2,3/2,5/2$^+$)	
3257.61 *22*	(1/2$^-$,3/2)	
3379.40 *29*	(1/2$^-$,3/2)	
3422.01 *25*	(1/2,3/2)	
3443.49 *29*	(1/2$^-$,3/2,5/2$^+$)	
3455.39 *29*	(1/2,3/2)	
3473.72 *29*	(1/2,3/2)	
3539.44 *29*	(1/2,3/2)	
3587.41 *29*	(1/2$^-$,3/2,5/2$^+$)	
3651.47 *25*	(1/2,3/2,5/2$^+$)	
3849.24 *29*	(1/2,3/2,5/2$^+$)	
3979.08 *29*	(1/2,3/2,5/2$^+$)	
(5715.78[@] *4*)	1/2$^+$ [@]	E(level): S(n)=5715.96 *5* (2021Wa16).

[†] From a least-squares fit to γ-ray energies, assuming ΔEγ=0.5 keV where not given.
[‡] From Adopted Levels, unless otherwise noted.
[#] From $\gamma\gamma$(t) (1968Na21), unless otherwise stated.
[@] S(n)=5715.96 *5* (2021Wa16). J^{π}: s-wave capture in ^{164}Dy g.s. $\Gamma(\gamma)$=0.058 eV (1984Pr03).
[&] Band(A): ν7/2[633].
[a] Band(B): ν1/2[521].
[b] Band(C): ν5/2[512].
[c] Band(D): ν5/2[523]. This assignment has not been carried into the adopted data set.
[d] Band(E): K^{π}=3/2$^+$ band. From K-2 γ vibration built on ν7/2[633], where K=7/2.
[e] Band(F): K^{π}=1/2$^-$ band. From ν1/2[510]+(K−2 γ vibration built on 5/2[512], K=5/2).
[f] Band(G): K^{π}=3/2$^-$ band. From ν3/2[521]+(K−2 γ vibration built on ν1/2[521], K=1/2).

γ(^{165}Dy)

Table 2 of 1990Ka21 lists energies and intensities of all the observed secondary gammas. For those assigned in the level scheme, energy of the initial levels are also listed. Table 6 of 1990Ka21 lists authors′ proposed level scheme with energies and spins of initial and final states and associated γ-ray energies and intensities. Relative conversion-electron intensities under comments are from 1967Du05.

$E_γ$[†]	$I_γ$[‡e]	E_i(level)	$J^π_i$	E_f	$J^π_f$	Mult.[b]	δ[b]	α[d]	Comments
22.35[g] 2		180.9230	(5/2)⁻	158.5888	(3/2)⁻	(M1)		30.9 4	α(L)=24.18 34; α(M)=5.31 8 α(N)=1.228 18; α(O)=0.1792 26; α(P)=0.01017 14 $E_γ$: from ce in 1967Du05 only. Mult.: from L1:L2:M=100 50:16 8:26 13; ce(L1) and ce(M) may include contributions from ce(K)(67.7γ), and ce(L)(29.9γ), respectively (1967Du05). Ice(L1)=4.6 23, Ice(L2)=0.74 37, Ice(M)=1.2 6.
34.849 2	0.010 2	605.0960	(3/2)⁻	570.2611	(1/2)⁻	M1		8.28 12	α(L1)exp=8.5 50 α(L)=6.48 9; α(M)=1.424 20 α(N)=0.329 5; α(O)=0.0481 7; α(P)=0.00273 4 Ice(L1)=0.07 4. $E_γ$: from 1965Sc09; outside the range in 1990Ka21. Poor-fit; level-energy difference=34.835. $I_γ$: from 1967Du05.
39.480 5	0.003 1	337.1632	(9/2)⁻	297.6837	(7/2)⁻				$E_γ$: from 1965Sc09; outside the range in 1990Ka21.
ˣ46.456 6	0.015 7								
50.434 1	3.9 17	158.5888	(3/2)⁻	108.1554	1/2⁻	M1+E2	0.40 +15−18	8 4	α(L1)exp=1.9 10; α(L2)exp=1.9 10; α(L3)exp=2.3 13; α(M)exp=1.5 8; α(N)exp=0.5 3 α(L)=6.2 28; α(M)=1.5 7 α(N)=0.33 15; α(O)=0.041 17; α(P)=0.00082 7 Ice(L1)=6.0 18, Ice(L2)=6.1 18, Ice(L3)=7.5 22, Ice(M)=4.7 14, Ice(N)=1.7 5.
ˣ52.452 5	0.022 8								
ˣ52.889 1	0.016 3								
52.906 1	0.041 8	657.9990	(5/2)⁻	605.0960	(3/2)⁻				
ˣ54.437 5	0.009 2								
ˣ55.108 8	0.015 7								
ˣ56.067 6	0.005 2								
ˣ56.273 6	0.005 2								
ˣ56.588 6	0.006 2								
ˣ60.365 7	0.007 2								
ˣ61.393 3	0.017 4								
ˣ61.848 7	0.006 2								
ˣ63.981 9	0.007 3								

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[b]	δ[b]	α[d]	Comments
64.312 *6*	0.008 *2*	1320.810	(1/2$^-$,3/2,5/2$^-$)	1256.502	(3/2)				
^{x}64.458 *6*	0.008 *2*								
^{x}64.513 *6*	0.008 *2*								
64.757 *12*	0.006 *3*	976.784	(7/2,9/2)$^+$	911.9730	5/2$^+$				E_γ: poor-fit; level-energy difference=64.811.
64.968 *5*	0.014 *4*	648.9736	(7/2)$^+$	583.9965	5/2$^+$				
^{x}66.099 *6*	0.009 *2*								
^{x}68.288 *6*	0.007 *2*								
72.768 *1*	0.33 *7*	180.9230	(5/2)$^-$	108.1554	1/2$^-$	E2		9.20 *13*	α(K)exp=2.6 *10*; α(L2)exp= 4.4 *16*; α(L3)exp=5.2 *18*; α(M)exp=1.2 *5*; α(N)exp=0.26 *14* α(K)=2.182 *31*; α(L)=5.40 *8*; α(M)=1.297 *18* α(N)=0.290 *4*; α(O)=0.0344 *5*; α(P)=9.58×10^{-5} *13* Ice(K)=0.71 *21*, Ice(L2)=1.2 *3*, Ice(L3)=1.4 *3*, Ice(M)=0.32 *10*, Ice(N)=0.07 *4*.
77.514 *1*	0.20 *6*	261.7706	(7/2)$^-$	184.2545	5/2$^-$	M1+E2	0.40 *+16−21*	5.29 *24*	α(K)exp=7.3 *32*; α(L1)exp=0.7 *3*; α(L3)exp=0.31 *13*; α(M)exp=0.21 *11* α(K)=3.89 *24*; α(L)=1.09 *35*; α(M)=0.25 *9* α(N)=0.057 *19*; α(O)=0.0075 *22*; α(P)=0.000238 *19* Ice(K)=1.2 *4*, Ice(L1)=0.12 *4*, Ice(L3)=0.050 *15*, Ice(M)=0.035 *14*.
79.866 *4*	0.011 *2*	737.8578	(7/2)$^-$	657.9990	(5/2)$^-$	M1,E2		5.5 *9*	α(K)exp=5.6 *35* α(K)=2.9 *10*; α(L)=2.0 *15*; α(M)=0.48 *35* α(N)=0.11 *8*; α(O)=0.013 *9*; α(P)=1.6×10^{-4} *8* Ice(K)=0.05 *3*.
^{x}80.553 *2*	0.115 *25*								
83.398 *2*	0.45 *10*	83.3952	(9/2)$^+$	0.0	7/2$^+$	M1+E2	0.31 *+8−5*	4.16 *8*	α(K)=3.25 *9*; α(L)=0.71 *10*; α(M)=0.160 *25* α(N)=0.037 *6*; α(O)=0.0050 *6*; α(P)=0.000200 *7* α(K)exp=2.4 *9*; α(L1)exp=0.25 *10* L1/L2=3 (1965Bo40). Ice(K)=0.88 *26*, Ice(L1)=0.091 *27*.
^{x}85.644 *2*	0.002 *1*								
^{x}86.566 *2*	0.002 *1*								
^{x}86.733 *11*	0.002 *1*								
86.930 *6*	0.005 *1*	1174.9524	(3/2,5/2)$^-$	1088.0107	(3/2$^-$)				
^{x}86.954 *2*	0.002 *1*								
90.208 *2*	0.002 *1*	628.8377	(5/2)$^-$	538.6349	3/2$^+$				
^{x}92.366 *6*	0.011 *3*								
^{x}92.380 *16*	0.015 *4*								
^{x}92.633 *7*	0.011 *5*								
^{x}94.178 *1*	0.003 *2*								
98.863 *2*	0.058 *25*	360.6306	(9/2)$^-$	261.7706	(7/2)$^-$				

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[b]	α[d]	Comments
[x]100.630 *15*	0.003 *1*							
100.792[g] *2*	0.002 *1*	705.9105	(7/2)⁻	605.0960	(3/2)⁻			E_γ: placement from 1965Sc09; unplaced in 1990Ka21; level-energy difference=100.815.
101.175 *1*	0.006 *1*	1482.060	(5/2⁻)	1380.885	(5/2⁺)			
[x]102.214 *10*	0.006 *2*							
102.701 *2*	0.033 *7*	186.0946	(11/2⁺)	83.3952	(9/2)⁺	[M1]	2.218 *31*	α(K)=1.867 *26*; α(L)=0.275 *4*; α(M)=0.0604 *8* α(N)=0.01396 *20*; α(O)=0.002042 *29*; α(P)=0.0001164 *16*
[x]103.147 *13*	0.011 *3*							
104.104 *2*	0.057 *11*	1016.0752	(5/2⁺)	911.9730	5/2⁺			
[x]104.148 *3*	0.041 *9*							
108.157 *3*	2.5 *5*	108.1554	1/2⁻	0.0	7/2⁺	E3	31.0 *4*	α(K)exp=2.6 *10*; α(L2)exp=12.1 *37*; α(L3)exp=7.8 *24*; α(M3)exp=4.8 *15*; α(N3)exp=1.1 *4* α(K)=3.25 *5*; α(L)=21.09 *30*; α(M)=5.32 *7* α(N)=1.199 *17*; α(O)=0.1410 *20*; α(P)=0.0002065 *29* Ice(K)=5.4 *16*, Ice(L2)=25 *5*, Ice(L3)=16 *3*, Ice(M3)=9.9 *20*, Additional information 2.
[x]109.369 *19*	0.004 *2*							
110.328 *7*	0.005 *1*	648.9736	(7/2)⁺	538.6349	3/2⁺			
[x]110.362 *9*	0.011 *5*							
[x]110.936 *9*	0.002 *1*							
[x]111.210 *7*	0.005 *1*							
[x]112.234[a] *2*								
[x]113.132 *13*	0.009 *3*							
[x]114.532 *11*	0.009 *2*							
[x]115.092[a] *2*								
[x]116.162 *5*	0.030 *8*							
116.760 *1*	0.52 *12*	297.6837	(7/2)⁻	180.9230	(5/2)⁻	E2	1.535 *21*	α(K)exp=0.66 *26*; α(M2)exp=0.070 *23* α(K)=0.750 *10*; α(L)=0.605 *8*; α(M)=0.1443 *20* α(N)=0.0324 *5*; α(O)=0.00393 *6*; α(P)=3.17×10^{-5} *4* Ice(K)=0.28 *8*, Ice(M2)=0.030 *6*.
[x]117.813 *9*	0.003 *1*							
[x]119.349[a] *6*								
[x]120.561[a] *5*								
[x]120.855[a] *3*								
[x]121.525 *24*	0.001 *1*							
[x]121.806 *11*	0.002 *1*							
121.898 *10*	0.007 *2*	705.9105	(7/2)⁻	583.9965	5/2⁺			
[x]122.97 *4*	0.016 *6*							
[x]124.749 *5*	0.022 *5*							
[x]125.23 *4*	0.019 *7*							
[x]127.193 *21*	0.002 *1*							

γ(^{165}Dy) (continued)

Eγ[†]	Iγ[‡e]	Ei(level)	J_i^π	E_f	J_f^π	Mult.[b]	α[d]	Comments
127.719 14	0.002 1	1464.8481	(3/2)⁻	1337.103	(1/2⁺,3/2⁺)			Additional information 3.
x127.913 20	0.001 1							
x128.930 18	0.003 1							
130.370 20	0.018 9	1218.3547	(5/2⁺)	1088.0107	(3/2⁻)			
x130.889[a] 5								
131.145 22	0.005 2	1440.470	(5/2⁺)	1309.301	(3/2⁻,5/2⁻)			
x131.60 6	0.010 3							
132.767 5	0.002 1	737.8578	(7/2)⁻	605.0960	(3/2)⁻			
x134.663[a] 13								
x135.871 19	0.028 6					(E1,E2)	0.1358 19	α(K)exp<0.65 α(K)=0.1140 16; α(L)=0.01707 24; α(M)=0.00374 5 α(N)=0.000851 12; α(O)=0.0001180 17; α(P)=5.49×10^{-6} 8 Ice(K)<0.015.
x138.09 3	0.011 3							
139.096 2	0.97 21	297.6837	(7/2)⁻	158.5888	(3/2)⁻	E2	0.821 11	α(K)exp=0.38 21; α(M2)exp=0.053 17 α(K)=0.460 6; α(L)=0.278 4; α(M)=0.0661 9 α(N)=0.01487 21; α(O)=0.001824 26; α(P)=2.015×10^{-5} 28 Ice(K)=0.30 15, Ice(M2)=0.042 8.
x139.877[a] 16								
x142.31 3	0.002 1							
x142.488[a] 2								
x143.300 10	0.005 1							
x146.814[a] 4								
x150.223 14	0.001 1							
x150.577 15	0.002 1							
x150.969 2	0.003 1							
x154.730[a] 11								Ice(L1)=0.006 4 and Iγ=0.18 2 for 153.87, (E2) (1967Du05).
x155.497 11	0.002 1							
155.547 3	0.002 1	1464.8481	(3/2)⁻	1309.301	(3/2⁻,5/2⁻)			
x155.800 21	0.002 1							
156.240 1	0.242 25	337.1632	(9/2)⁻	180.9230	(5/2)⁻	E2	0.547	α(L2)exp=0.10 3 α(K)=0.329 5; α(L)=0.1683 24; α(M)=0.0398 6 α(N)=0.00897 13; α(O)=0.001110 16; α(P)=1.479×10^{-5} 21 Ice(L2)=0.019 6.
x157.421 3	0.015 1							
x159.492 4	0.006 1							
x160.768[a] 7								
x161.204[a] 13								
x161.276[a] 11								
x163.539[a] 2								

$^{165}_{66}$Dy$_{99}$-8

^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05 (continued)

γ(^{165}Dy) (continued)

Eγ[†]	Iγ[‡e]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[b]	α[d]	Comments
x169.671[a] 9								
174.554 6	0.001 1	360.6306	(9/2)⁻	186.0946	(11/2⁺)			
x174.610[a] 21								
x174.76[a] 5								
176.367 5	0.013 1	360.6306	(9/2)⁻	184.2545	5/2⁻			α(K)exp<0.9 Ice(K)<0.01.
178.374 4	0.119 12	261.7706	(7/2)⁻	83.3952	(9/2)⁺	E1	0.0658 9	α(K)exp<0.094 α(K)=0.0554 8; α(L)=0.00810 11; α(M)=0.001771 25 α(N)=0.000405 6; α(O)=5.68×10^{-5} 8; α(P)=2.77×10^{-6} 4 Ice(K)<0.01.
x179.364 9	0.008 1							
x179.771[a] 14								
x180.059 13	0.003 1							
x180.742 9	0.003 1							
x180.931 10	0.011 4							
184.252 2	18.9 19	184.2545	5/2⁻	0.0	7/2⁺	E1	0.0604 8	α(K)exp=0.054 14; α(L1)exp=0.0067 15; α(L3)exp=0.0019 6; α(M)exp=0.0017 6 α(K)=0.0509 7; α(L)=0.00742 10; α(M)=0.001622 23 α(N)=0.000371 5; α(O)=5.21×10^{-5} 7; α(P)=2.55×10^{-6} 4 Ice(K)=0.84 17, Ice(L1)=0.104 16, Ice(L3)=0.029 9, Ice(M)=0.026 8.
x185.29 5	0.002 1							
186.100[#] 6	0.016 1	186.0946	(11/2⁺)	0.0	7/2⁺	[E2]	0.301 4	α(K)=0.1965 28; α(L)=0.0806 11; α(M)=0.01895 27 α(N)=0.00428 6; α(O)=0.000537 8; α(P)=9.22×10^{-6} 13
x189.406 10	0.008 1							
x190.824 17	0.002 1							
x191.583 9	0.006 3							
x194.524[a] 7								
196.231[f] 10	0.014[f] 1	1108.2008	(3/2)⁺	911.9730	5/2⁺			
196.231[f] 10	0.014[f] 1	1337.103	(1/2⁺,3/2⁺)	1140.8661	(3/2⁺)			
x196.838 4	0.008 1							
x198.437 4	0.008 1							
x200.27 5	0.001 1							
x201.91[a] 4								
x203.209[a] 11								
x204.425[a] 23								
x206.019 8	0.004 1							
x206.122[a] 13								
x206.294 9	0.003 1							
x207.406 5	0.011 1							

$^{165}_{66}Dy_{99}$-9

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[b]	α[d]	Comments
208.339 4	0.018 2	1464.8481	(3/2)$^-$	1256.502	(3/2)			
^{x}212.391[a] 19								
212.611 12	0.001 1	1320.810	(1/2$^-$,3/2,5/2$^-$)	1108.2008	(3/2)$^+$			
^{x}215.254 12	0.022 4							
^{x}215.931 6	0.007 1							
^{x}220.702 8	0.006 1							
^{x}225.728 4	0.002 1							
^{x}228.400 4	0.005 1							
228.922[f] 21	0.009[f] 4	1140.8661	(3/2$^+$)	911.9730	5/2$^+$			
228.922[f] 21	0.009[f] 4	1337.103	(1/2$^+$,3/2$^+$)	1108.2008	(3/2)$^+$			
^{x}230.733 12	0.002 1							
^{x}231.036 19	0.010 1							
^{x}231.620 7	0.007 1							
234.065 6	0.005 1	1337.103	(1/2$^+$,3/2$^+$)	1103.0447	(3/2)$^-$			
^{x}234.525 3	0.023 2							
235.796 12	0.025 2	533.4930	5/2$^-$	297.6837	(7/2)$^-$			
^{x}240.521 9	0.001 1							
^{x}244.488 22	0.003 1							
^{x}245.466 15	0.001 1							
^{x}245.915 6	0.004 1							
246.997 2	0.046 4	607.6246	(7/2)$^-$	360.6306	(9/2)$^-$	M1,E2	0.15 4	α(K)exp=0.13 8 α(K)=0.12 4; α(L)=0.0246 14; α(M)=0.0056 5 α(N)=0.00127 9; α(O)=0.0001748 29; α(P)=7.1×10^{-6} 28 Mult.: α(K)exp allows E2 or E1; ΔJ^π consistent with E2. Ice(K)=0.005 3.
^{x}248.472[a] 1								
249.082 6	0.007 1	1337.103	(1/2$^+$,3/2$^+$)	1088.0107	(3/2$^-$)			
^{x}249.490 11	0.002 1							
^{x}250.301[a] 4								
^{x}250.61 3	0.014 7							
^{x}251.717 8	0.014 1							
^{x}252.509 3	0.34 4							
253.556[g] 15	0.004 4	911.9730	5/2$^+$	657.9990	(5/2)$^-$			E_γ: placement from 1965Sc09; unplaced in 1990Ka21; level-energy difference=253.974.
^{x}254.778 8	0.002 1							
^{x}255.57 4	0.002 1							
257.052 22	0.007 1	1337.103	(1/2$^+$,3/2$^+$)	1080.0395	(1/2,3/2)$^-$			
258.217 6	0.003 1	1416.3378	(3/2)	1158.1185	(5/2$^+$)			
261.771 2	0.155 15	261.7706	(7/2)$^-$	0.0	7/2$^+$	E1	0.02424 34	α(K)exp=0.033 17

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[b]	δ[b]	α[d]	Comments
									α(K)=0.02051 *29*; α(L)=0.00292 *4*; α(M)=0.000638 *9* α(N)=0.0001463 *20*; α(O)=2.079×10^{-5} *29*; α(P)=1.068×10^{-6} *15* Ice(K)=0.0042 *21*.
[x]262.845 *17*	0.001 *1*								
[x]262.99[a] *4*									
[x]270.215 *2*	0.041 *4*								
270.461 *4*	0.012 *1*	607.6246	(7/2)$^-$	337.1632	(9/2)$^-$				
271.721 *1*	0.42 *4*	533.4930	5/2$^-$	261.7706	(7/2)$^-$	M1+E2	1.0 *+24−7*	0.117 *25*	α(K)exp=0.093 *24* α(K)=0.094 *25*; α(L)=0.01802 *26*; α(M)=0.00406 *12* α(N)=0.000930 *21*; α(O)=0.000129 *5*; α(P)=5.5×10^{-6} *18* Ice(K)=0.032 *6*.
[x]275.646 *10*	0.003 *1*								
277.238 *11*	0.010 *1*	360.6306	(9/2)$^-$	83.3952	(9/2)$^+$				α(K)exp=0.7 *3* Mult.: M1+E2 (1967Du05) is inconsistent with E1+M2 required by ΔJ^π, deduced α(K)exp is too high to be consistent with any of these multipolarities. It is likely the Ice(K) of a single γ in 1967Du05 is for a multiplet of several γ rays with very close energies in 1990Ka21. Ice(K)=0.006 *2*.
277.74[c] *4*	0.007 *2*	1444.721	(3/2$^-$,5/2$^+$)	1166.8920	(3/2)$^-$				
277.843[c] *5*	0.005 *1*	1380.885	(5/2$^+$)	1103.0447	(3/2)$^-$				
[x]281.408 *2*	0.052 *5*					M1(+E2)	<1.1	0.119 *15*	α(K)exp=0.16 *6* α(K)=0.098 *15*; α(L)=0.01620 *26*; α(M)=0.00360 *6* α(N)=0.000829 *12*; α(O)=0.000118 *4*; α(P)=5.9×10^{-6} *11* Ice(K)=0.0070 *21*.
[x]282.51 *4*	0.002 *1*								
[x]283.019 *8*	0.003 *1*								
[x]283.979 *16*	0.005 *1*								
[x]285.067 *5*	0.008 *1*								
[x]285.799[a] *12*									
286.312 *2*	0.100 *10*	583.9965	5/2$^+$	297.6837	(7/2)$^-$	E1		0.01933 *27*	α(K)=0.01637 *23*; α(L)=0.002320 *32*; α(M)=0.000506 *7* α(N)=0.0001162 *16*; α(O)=1.655×10^{-5} *23*; α(P)=8.59×10^{-7} *12*

γ(^{165}Dy) (continued)

Eγ[†]	Iγ[‡e]	Ei(level)	J^π_i	Ef	J^π_f	Mult.[b]	α[d]	Comments
								α(K)exp<0.05 Ice(K)<0.004.
[x]287.20 *3*	0.008 *2*							
[x]287.504 *7*	0.003 *1*							
[x]291.230 *11*	0.003 *1*							
292.893 *10*	0.003 *1*	1380.885	(5/2$^+$)	1088.0107	(3/2$^-$)			
[x]294.794 *8*	0.010 *1*							
[x]295.180 *11*	0.001 *1*							
296.293 *3*	0.011 *1*	1376.3374	(3/2$^+$)	1080.0395	(1/2,3/2)$^-$			
297.370 *3*	0.052 *5*	657.9990	(5/2)$^-$	360.6306	(9/2)$^-$	(E2)	0.0663 *9*	α(K)=0.0496 *7*; α(L)=0.01295 *18*; α(M)=0.00298 *4* α(N)=0.000678 *9*; α(O)=8.91×10^{-5} *12*; α(P)=2.58×10^{-6} *4* α(K)exp<0.09 Mult.: α(K)exp allows E1,E2; Δπ=(no) consistent with (E2). Ice(K)<0.004.
[x]300.455 *14*	0.006 *1*							
[x]302.36 *4*	0.004 *1*							
303.89 *7*	0.011 *5*	1444.721	(3/2$^-$,5/2$^+$)	1140.8661	(3/2$^+$)			
[x]304.186 *4*	0.011 *2*							
304.367[g] *4*	0.008 *1*	911.9730	5/2$^+$	607.6246	(7/2)$^-$			Eγ: placement from 1965Sc09; unplaced in 1990Ka21; level-energy difference=304.348.
[x]306.068 *7*	0.012 *1*							
306.733 *11*	0.019 *2*	1464.8481	(3/2)$^-$	1158.1185	(5/2$^+$)			
[x]309.38 *5*	0.009 *4*							
309.941 *2*	0.025 *2*	607.6246	(7/2)$^-$	297.6837	(7/2)$^-$			
311.812[f] *3*	0.030[f] *3*	573.5847	(3/2)$^-$	261.7706	(7/2)$^-$			
311.812[f] *3*	0.030[f] *3*	648.9736	(7/2)$^+$	337.1632	(9/2)$^-$			
313.293 *2*	0.036 *3*	1416.3378	(3/2)	1103.0447	(3/2)$^-$			
[x]313.655 *8*	0.005 *1*							
[x]316.442 *24*	0.007 *1*							
320.236 *3*	0.015 *1*	1400.2735	(3/2$^+$)	1080.0395	(1/2,3/2)$^-$			
320.549[g] *5*	0.025 *2*	1456.398	(3/2)	1135.8118	(5/2$^-$)			Eγ: placement from table 2 of 1990Ka21; not listed in authors′ table 6. Placement treated as tentative by the evaluators. Eγ: level-energy difference=320.586.
322.224 *2*	0.036 *3*	583.9965	5/2$^+$	261.7706	(7/2)$^-$			
323.994 *11*	0.001 *1*	1464.8481	(3/2)$^-$	1140.8661	(3/2$^+$)			
328.328 *2*	0.063 *6*	1416.3378	(3/2)	1088.0107	(3/2$^-$)			α(K)exp=0.14 *4* Mult.: E1 from 1967Du05 using their Iγ=0.80 *12*, but deduced α(K)exp using Iγ here (1990Ka21) is too high to be consistent with any multipolarity. Ice(K)=0.0070 *18*.
329.041 *16*	0.005 *1*	1464.8481	(3/2)$^-$	1135.8118	(5/2$^-$)			

$^{165}_{66}$Dy$_{99}$-12

γ(^{165}Dy) (continued)

E_γ [†]	I_γ [‡e]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [b]	δ [b]	α [d]	Comments
331.151 *10*	0.55 *6*	628.8377	(5/2)$^-$	297.6837	(7/2)$^-$	M1(+E2)	<0.4	0.0841 *29*	α(K)exp=0.079 *13*; α(L1)exp=0.0110 *18* α(K)=0.0708 *27*; α(L)=0.01041 *19*; α(M)=0.00229 *4* α(N)=0.000529 *9*; α(O)=7.71×10^{-5} *16*; α(P)=4.34×10^{-6} *19* Ice(K)=0.0354 *14*, Ice(L1)=0.005.
^{x}331.817 *25*	0.041 *9*								
^{x}332.574 *17*	0.001 *1*								
^{x}334.064[a] *4*									
336.299 *4*	0.060 *6*	1416.3378	(3/2)	1080.0395	(1/2,3/2)$^-$				α(K)exp<0.08 Ice(K)<0.004.
^{x}338.500[a] *9*									
^{x}338.930 *11*	0.010 *1*								
^{x}339.225 *10*	0.020 *2*								
342.269 *10*	0.005 *1*	702.892	(5/2$^-$,7/2$^-$,9/2$^-$)	360.6306	(9/2)$^-$				
343.323 *3*	0.46 *5*	605.0960	(3/2)$^-$	261.7706	(7/2)$^-$	E2		0.0430	α(K)exp=0.037 *7* α(K)=0.0330 *5*; α(L)=0.00777 *11*; α(M)=0.001777 *25* α(N)=0.000404 *6*; α(O)=5.39×10^{-5} *8*; α(P)=1.762×10^{-6} *25* Ice(K)=0.0140 *14*.
345.849 *3*	0.105 *10*	607.6246	(7/2)$^-$	261.7706	(7/2)$^-$	M1(+E2)	<1.1	0.068 *10*	α(K)exp=0.072 *24* α(K)=0.056 *9*; α(L)=0.0089 *5*; α(M)=0.00197 *9* α(N)=0.000453 *23*; α(O)=6.5×10^{-5} *5*; α(P)=3.4×10^{-6} *6* Ice(K)=0.0062 *19*.
^{x}347.395[a] *7*									
^{x}348.53 *5*	0.015 *4*								
349.241 *2*	1.88 *19*	533.4930	5/2$^-$	184.2545	5/2$^-$	M1(+E2)	<1.2	0.065 *10*	α(K)exp=0.057 *9*; α(L12)exp=0.012 *4*; α(L3)exp=0.0026 *21* α(K)=0.054 *10*; α(L)=0.0086 *6*; α(M)=0.00191 *10* α(N)=0.000439 *25*; α(O)=6.3×10^{-5} *5*; α(P)=3.3×10^{-6} *7* Ice(K)=0.088 *3*, Ice(L12)=0.019 *5*, Ice(L3)=0.004 *3*.
351.283 *5*	0.029 *3*	648.9736	(7/2)$^+$	297.6837	(7/2)$^-$				
352.574 *2*	0.200 *20*	533.4930	5/2$^-$	180.9230	(5/2)$^-$	M1+E2	>0.3	0.055 *16*	α(K)exp=0.043 *16* α(K)=0.045 *14*; α(L)=0.0079 *8*; α(M)=0.00177 *15* α(N)=0.00041 *4*; α(O)=5.7×10^{-5} *8*; α(P)=2.6×10^{-6} *10* Ice(K)=0.0070 *25*.

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	δ[b]	α[d]	Comments
354.381 *1*	0.43 *4*	538.6349	3/2$^+$	184.2545	5/2$^-$	E1		0.01143 *16*	α(K)exp=0.014 *5* α(K)=0.00970 *14*; α(L)=0.001358 *19*; α(M)=0.000296 *4* α(N)=6.80×10^{-5} *10*; α(O)=9.75×10^{-6} *14*; α(P)=5.18×10^{-7} *7* Ice(K)=0.0050 *18*.
356.659 *5*	0.054 *6*	1464.8481	(3/2)$^-$	1108.2008	(3/2)$^+$				
^{x}357.063 *7*	0.027 *7*								
357.714 *3*	0.32 *3*	538.6349	3/2$^+$	180.9230	(5/2)$^-$	(E1)		0.01118 *16*	α(K)exp=0.030 *22* α(K)=0.00948 *13*; α(L)=0.001327 *19*; α(M)=0.000289 *4* α(N)=6.65×10^{-5} *9*; α(O)=9.53×10^{-6} *13*; α(P)=5.07×10^{-7} *7* Mult.: α(K)exp allows M1,E1,E2, ΔJ^π requires E1. Ice(K)=0.008 *6*.
360.278 *6*	0.013 *2*	1376.3374	(3/2$^+$)	1016.0752	(5/2$^+$)				
^{x}361.349 *9*	0.027 *4*								
^{x}364.346 *11*	0.010 *1*								
365.724 *7*	0.006 *1*	702.892	(5/2$^-$,7/2$^-$,9/2$^-$)	337.1632	(9/2)$^-$				
^{x}366.891 *4*	0.011 *1*								
367.094 *4*	0.023 *2*	1016.0752	(5/2$^+$)	648.9736	(7/2)$^+$				
368.352 *14*	0.015 *1*	1456.398	(3/2)	1088.0107	(3/2$^-$)				
368.749 *2*	0.177 *20*	705.9105	(7/2)$^-$	337.1632	(9/2)$^-$	M1(+E2)	<1.6	0.054 *11*	α(K)exp=0.048 *13* α(K)=0.045 *10*; α(L)=0.0073 *7*; α(M)=0.00161 *13* α(N)=0.000370 *31*; α(O)=5.3×10^{-5} *6*; α(P)=2.7×10^{-6} *7* Ice(K)=0.0070 *14*.
^{x}369.218 *13*	0.005 *1*								
^{x}372.59[a] *3*									
^{x}373.184 *20*	0.009 *2*								
^{x}373.521 *16*	0.024 *3*								
^{x}374.506 *11*	0.015 *1*								
374.903 *2*	0.163 *17*	533.4930	5/2$^-$	158.5888	(3/2)$^-$	M1(+E2)	<0.6	0.059 *4*	α(K)exp=0.075 *19* α(K)=0.049 *4*; α(L)=0.00733 *26*; α(M)=0.00161 *5* α(N)=0.000372 *12*; α(O)=5.42×10^{-5} *23*; α(P)=3.01×10^{-6} *25* Ice(K)=0.010 *2*.
376.088 *2*	0.064 *6*	1479.1319	(3/2$^-$,5/2$^-$)	1103.0447	(3/2)$^-$				
^{x}376.321 *3*	0.102 *10*								
376.832 *4*	0.020 *2*	1464.8481	(3/2)$^-$	1088.0107	(3/2$^-$)				
377.221 *6*	0.015 *1*	737.8578	(7/2)$^-$	360.6306	(9/2)$^-$				

$^{165}_{66}$Dy$_{99}$-14

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	δ[b]	α[d]	Comments
[x]377.567 *12*	0.008 *1*								
378.487 *4*	0.061 *7*	911.9730	5/2$^+$	533.4930	5/2$^-$				
[x]378.854 *7*	0.012 *1*								
[x]379.216 *4*	0.017 *2*								
380.045 *1*	0.57 *6*	538.6349	3/2$^+$	158.5888	(3/2)$^-$	E1		0.00967 *14*	α(K)exp=0.011 *6* α(K)=0.00821 *11*; α(L)=0.001145 *16*; α(M)=0.0002496 *35* α(N)=5.74×10^{-5} *8*; α(O)=8.23×10^{-6} *12*; α(P)=4.41×10^{-7} *6* Ice(K)=0.005 *3*.
[x]381.673 *14*	0.005 *1*								
384.813 *4*	0.011 *1*	1464.8481	(3/2)$^-$	1080.0395	(1/2,3/2)$^-$				
386.011 *2*	4.4 *4*	570.2611	(1/2)$^-$	184.2545	5/2$^-$	E2		0.0307 *4*	α(K)exp=0.024 *4*; α(L12)exp=0.0044 *10*; α(L3)exp=0.0022 *14* α(K)=0.02395 *34*; α(L)=0.00521 *7*; α(M)=0.001187 *17* α(N)=0.000271 *4*; α(O)=3.65×10^{-5} *5*; α(P)=1.300×10^{-6} *18* Ice(K)=0.086 *4*, Ice(L12)=0.016 *24*, Ice(L3)=0.008 *5*.
387.207 *4*	0.046 *4*	648.9736	(7/2)$^+$	261.7706	(7/2)$^-$				
[x]388.345 *4*	0.017 *1*								
[x]389.334[a] *4*									
391.120 *4*	0.027 *3*	1479.1319	(3/2$^-$,5/2$^-$)	1088.0107	(3/2$^-$)				
[x]392.06 *6*	0.027 *5*								
392.663 *2*	1.39 *15*	573.5847	(3/2)$^-$	180.9230	(5/2)$^-$	M1(+E2)	<1.2	0.048 *8*	α(K)exp=0.039 *9*; α(L1)exp=0.013 *6* α(K)=0.040 *7*; α(L)=0.0062 *5*; α(M)=0.00136 *10* α(N)=0.000315 *25*; α(O)=4.5×10^{-5} *5*; α(P)=2.4×10^{-6} *5* Ice(K)=0.045 *7*, Ice(L1)=0.015 *6*.
[x]393.897 *5*	0.021 *3*								
396.222 *3*	0.30 *3*	657.9990	(5/2)$^-$	261.7706	(7/2)$^-$	M1,E2		0.041 *13*	α(K)exp=0.037 *19* α(K)=0.034 *12*; α(L)=0.0057 *9*; α(M)=0.00126 *17* α(N)=0.00029 *4*; α(O)=4.1×10^{-5} *8*; α(P)=2.0×10^{-6} *8* Ice(K)=0.009 *5*.
[x]396.835 *7*	0.008 *1*								
397.962 *9*	0.006 *1*	1135.8118	(5/2$^-$)	737.8578	(7/2)$^-$				
399.746 *3*	0.24 *3*	583.9965	5/2$^+$	184.2545	5/2$^-$				α(K)exp=0.051 *22* Mult.: α(K)exp= gives M1+E2, but ΔJ^π requires E1. Ice(K)=0.010 *4*.
400.682 *4*	0.029 *3*	737.8578	(7/2)$^-$	337.1632	(9/2)$^-$				
403.073 *1*	0.40 *4*	583.9965	5/2$^+$	180.9230	(5/2)$^-$	E1		0.00841 *12*	α(K)exp=0.012 *8*

From ENSDF

γ(^{165}Dy) (continued)

E_γ [†]	I_γ [‡e]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [b]	δ [b]	α [d]	Comments
									α(K)=0.00715 10; α(L)=0.000993 14; α(M)=0.0002165 30 α(N)=4.98×10^{-5} 7; α(O)=7.16×10^{-6} 10; α(P)=3.85×10^{-7} 5 Ice(K)=0.0040 24.
408.229 3	0.29 3	705.9105	(7/2)$^-$	297.6837	(7/2)$^-$				
408.453 6	0.036 4	1016.0752	(5/2$^+$)	607.6246	(7/2)$^-$				
411.679 2	4.9 5	570.2611	(1/2)$^-$	158.5888	(3/2)$^-$	M1(+E2)	0.4 4	0.046 6	α(K)exp=0.040 6; α(L1)exp=0.0047 14 α(K)=0.039 5; α(L)=0.0057 4; α(M)=0.00125 9 α(N)=0.000288 21; α(O)=4.2×10^{-5} 4; α(P)=2.3×10^{-6} 4 Ice(K)=0.162 3, Ice(L1)=0.019 5. E_γ: poor-fit; level-energy difference=411.672.
^{x}414.16 6	0.017 6								
414.997 3	4.4 5	573.5847	(3/2)$^-$	158.5888	(3/2)$^-$	M1(+E2)	<0.7	0.044 4	α(K)exp=0.040 7; α(L1)exp=0.0050 15 α(K)=0.0372 35; α(L)=0.00551 29; α(M)=0.00121 6 α(N)=0.000280 14; α(O)=4.07×10^{-5} 24; α(P)=2.26×10^{-6} 23 Ice(K)=0.144 3, Ice(L1)=0.018 5.
^{x}419.85 4	0.014 3								
420.40 5	0.025 19	1158.1185	(5/2$^+$)	737.8578	(7/2)$^-$				
420.840 3	1.28 14	605.0960	(3/2)$^-$	184.2545	5/2$^-$	E2		0.035 11	α(K)exp=0.019 4 α(K)=0.029 10; α(L)=0.0048 8; α(M)=0.00106 17 α(N)=0.00024 4; α(O)=3.5×10^{-5} 7; α(P)=1.7×10^{-6} 7 Ice(K)=0.020 2.
^{x}422.22[a] 4									
423.366 6	0.113 11	607.6246	(7/2)$^-$	184.2545	5/2$^-$	M1(+E2)	<1.5	0.038 8	α(K)exp=0.05 3 α(K)=0.032 7; α(L)=0.0049 6; α(M)=0.00109 12 α(N)=0.000251 28; α(O)=3.6×10^{-5} 5; α(P)=1.9×10^{-6} 5 Ice(K)=0.005 3.
424.161 8	0.032 3	605.0960	(3/2)$^-$	180.9230	(5/2)$^-$				
425.335 16	0.164 22	533.4930	5/2$^-$	108.1554	1/2$^-$	(E2)		0.02337 33	α(K)exp=0.037 23 α(K)=0.01849 26; α(L)=0.00380 5; α(M)=0.000861 12 α(N)=0.0001965 28; α(O)=2.67×10^{-5} 4; α(P)=1.017×10^{-6} 14 Mult.: α(K)exp allows M1,E2; E2 from ΔJ=2 and Δπ=no. Ice(K)=0.005 3.
426.696 9	0.047 6	607.6246	(7/2)$^-$	180.9230	(5/2)$^-$				
^{x}429.950 12	0.048 5								
430.478 5	0.57 6	538.6349	3/2$^+$	108.1554	1/2$^-$	E1		0.00722 10	α(K)exp=0.006 5 α(K)=0.00613 9; α(L)=0.000850 12; α(M)=0.0001851 26 α(N)=4.26×10^{-5} 6; α(O)=6.13×10^{-6} 9; α(P)=3.32×10^{-7} 5 Ice(K)=0.003 2.
432.083 6	0.045 5	1016.0752	(5/2$^+$)	583.9965	5/2$^+$				
^{x}433.402 13	0.005 1								

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	δ[b]	α[d]	Comments
x436.150 15	0.011 1								
437.090 6	0.016 1	1174.9524	(3/2,5/2)$^-$	737.8578	(7/2)$^-$				
440.169 13	0.055 7	737.8578	(7/2)$^-$	297.6837	(7/2)$^-$				
441.120 19	0.012 1	702.892	(5/2$^-$,7/2$^-$,9/2$^-$)	261.7706	(7/2)$^-$				
x441.38 4	0.006 1								
442.55 4	0.008 1	1016.0752	(5/2$^+$)	573.5847	(3/2)$^-$				
x443.760 14	0.006 1								
444.139 8	0.015 1	705.9105	(7/2)$^-$	261.7706	(7/2)$^-$				α(K)exp=0.24 17 Mult.: M1+E2 from α(K)exp=0.07 in 1967Du05 using Iγ=0.04 1; but a(K)exp using Iγ here (1990Ka21) is too high to be consistent with any multipolarity. Ice(K)=0.0030 21.
444.564 8	0.005 1	628.8377	(5/2)$^-$	184.2545	5/2$^-$				
446.506 8	0.031 3	605.0960	(3/2)$^-$	158.5888	(3/2)$^-$				
x446.994 11	0.019 2								
447.915 2	2.45 25	628.8377	(5/2)$^-$	180.9230	(5/2)$^-$	M1(+E2)	0.5 5	0.036 6	α(K)exp=0.031 5; α(L12)exp=0.0030 16 α(K)=0.030 5; α(L)=0.0044 5; α(M)=0.00098 9 α(N)=0.000225 22; α(O)=3.3×10^{-5} 4; α(P)=1.81×10^{-6} 35 Ice(K)=0.062 3, Ice(L12)=0.006 3.
449.027 9	0.010 1	607.6246	(7/2)$^-$	158.5888	(3/2)$^-$				
450.213 12	0.011 1	1108.2008	(3/2)$^+$	657.9990	(5/2)$^-$				
x450.984 13	0.027 3								
451.205 3	0.076 8	1080.0395	(1/2,3/2)$^-$	628.8377	(5/2)$^-$				
452.208 4	0.057 6	1158.1185	(5/2$^+$)	705.9105	(7/2)$^-$				
x454.404[a] 20									
459.168 5	0.045 6	1088.0107	(3/2$^-$)	628.8377	(5/2)$^-$				
x460.135 7	0.016 3								
462.103 3	0.224 25	570.2611	(1/2)$^-$	108.1554	1/2$^-$	[M1]		0.0364 5	α(K)exp=0.022 17 α(K)=0.0308 4; α(L)=0.00437 6; α(M)=0.000957 13 α(N)=0.0002214 31; α(O)=3.25×10^{-5} 5; α(P)=1.884×10^{-6} 26 Mult.: α(K)exp allows dipole or E2; ΔJ^π requires dipole. Ice(K)=0.004 3.
462.883 7	0.084 9	648.9736	(7/2)$^+$	186.0946	(11/2$^+$)				
464.61 6	0.020 5	648.9736	(7/2)$^+$	184.2545	5/2$^-$				
465.427 3	5.2 6	573.5847	(3/2)$^-$	108.1554	1/2$^-$	M1(+E2)	<0.7	0.0328 29	α(K)exp=0.029 5; α(L12)exp=0.0040 8

^{164}Dy(n,γ) E=thermal **1990Ka21,1967Du05 (continued)**

γ(^{165}Dy) (continued)

E_γ [†]	I_γ [‡e]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [b]	δ [b]	α [d]	Comments
									α(K)=0.0277 *26*; α(L)=0.00406 *24*; α(M)=0.00089 *5* α(N)=0.000206 *12*; α(O)=3.00×10^{-5} *20*; α(P)=1.68×10^{-6} *17* Ice(K)=0.125 *10*, Ice(L12)=0.0170 *17*.
469.045 *4*	0.157 *16*	1174.9524	(3/2,5/2)$^-$	705.9105	(7/2)$^-$				
470.251 *4*	1.26 *17*	628.8377	(5/2)$^-$	158.5888	(3/2)$^-$	M1(+E2)	0.5 *+4−5*	0.031 *4*	α(K)exp=0.025 *5*; α(L12)exp=0.0042 *8* α(K)=0.026 *4*; α(L)=0.00390 *35*; α(M)=0.00086 *7* α(N)=0.000198 *17*; α(O)=2.88×10^{-5} *29*; α(P)=1.60×10^{-6} *25* Ice(K)=0.0262 *13*, Ice(L12)=0.0043.
^{x}472.023 *13*	0.011 *1*								
473.737 *3*	0.219 *22*	657.9990	(5/2)$^-$	184.2545	5/2$^-$				
474.212 *4*	0.194 *22*	1103.0447	(3/2)$^-$	628.8377	(5/2)$^-$	M1		0.0340 *5*	α(K)exp=0.052 *14* α(K)=0.0288 *4*; α(L)=0.00409 *6*; α(M)=0.000894 *13* α(N)=0.0002070 *29*; α(O)=3.04×10^{-5} *4*; α(P)=1.762×10^{-6} *25* Ice(K)=0.0083 *17*.
474.945 *3*	0.38 *4*	1080.0395	(1/2,3/2)$^-$	605.0960	(3/2)$^-$				
477.072 *3*	2.0 *3*	657.9990	(5/2)$^-$	180.9230	(5/2)$^-$	M1(+E2)	<0.7	0.0308 *27*	α(K)exp=0.028 *6*; α(L12)exp=0.0049 *15* α(K)=0.0260 *24*; α(L)=0.00380 *23*; α(M)=0.00083 *5* α(N)=0.000193 *11*; α(O)=2.81×10^{-5} *19*; α(P)=1.58×10^{-6} *16* Ice(K)=0.047 *4*, Ice(L12)=0.008 *2*. E_γ: 1965Sc09 placed this γ also from 1015.9 level.
479.372 *4*	0.202 *21*	1108.2008	(3/2)$^+$	628.8377	(5/2)$^-$				α(K)exp=0.048 *25* Mult.: M1(+E2) from α(K)exp inconsistent with ΔJ^π which requires E1. Ice(K)=0.008 *4*.
480.491 *5*	0.192 *23*	1218.3547	(5/2$^+$)	737.8578	(7/2)$^-$				
^{x}481.154 *12*	0.017 *2*								
482.591 *6*	0.049 *5*	1016.0752	(5/2$^+$)	533.4930	5/2$^-$				
486.841 *6*	0.088 *10*	1135.8118	(5/2$^-$)	648.9736	(7/2)$^+$				
^{x}490.208 *13*	0.008 *2*								
^{x}493.471 *15*	0.003 *1*								
495.429 *12*	0.006 *1*	1103.0447	(3/2)$^-$	607.6246	(7/2)$^-$				
496.942 *3*	6.0 *7*	605.0960	(3/2)$^-$	108.1554	1/2$^-$	M1(+E2)	<0.6	0.023 *7*	α(K)exp=0.027 *5*; α(L12)exp=0.0035 *7* α(K)=0.019 *7*; α(L)=0.0030 *6*; α(M)=0.00066 *13* α(N)=0.000152 *31*; α(O)=2.2×10^{-5} *5*; α(P)=1.1×10^{-6} *4* Ice(K)=0.131 *7*, Ice(L12)=0.0170 *17*.
499.407 *4*	1.92 *21*	657.9990	(5/2)$^-$	158.5888	(3/2)$^-$	M1,E2		0.022 *7*	α(K)exp=0.032 *6*

γ(^{165}Dy) (continued)

$E_γ$ [†]	$I_γ$ [‡e]	E_i(level)	$J^π_i$	E_f	$J^π_f$	Mult. [b]	α [d]	Comments
								α(K)=0.019 *7*; α(L)=0.0029 *6*; α(M)=0.00065 *13*
								α(N)=0.000150 *31*; α(O)=2.1×10^{-5} *5*; α(P)=1.1×10^{-6} *4*
								Ice(K)=0.050 *4*.
500.603 *7*	1.45 *15*	583.9965	5/2$^+$	83.3952	(9/2)$^+$			α(K)exp=0.042 *7*; α(L12)exp=0.0062 *21*
								Ice(K)=0.050 *4*, Ice(L12)=0.0074 *22*, likely for a doublet.
								$E_γ$: 1965Sc09 placed it also from 1158.4 level.
								Mult.: α(K)exp is too high to be consistent with any of E1, M1, E2; Δ$J^π$ requires (E2).
^{x}502.111 *11*	0.010 *1*							
504.013 *6*	0.201 *20*	1088.0107	(3/2$^-$)	583.9965	5/2$^+$			
506.459 *4*	0.83 *8*	1080.0395	(1/2,3/2)$^-$	573.5847	(3/2)$^-$	(E2)	0.01466 *21*	α(K)exp=0.012 *6*
								α(K)=0.01181 *17*; α(L)=0.002213 *31*; α(M)=0.000498 *7*
								α(N)=0.0001140 *16*; α(O)=1.574×10^{-5} *22*; α(P)=6.62×10^{-7} *9*
								Mult.: α(K)exp allows E2 or E1; but Δ$J^π$ consistent with E2.
								Ice(K)=0.008 *4*.
506.980 *15*	0.031 *5*	1135.8118	(5/2$^-$)	628.8377	(5/2)$^-$			
508.899 *3*	0.85 *9*	1166.8920	(3/2)$^-$	657.9990	(5/2)$^-$	(E2)	0.01447 *20*	α(K)exp=0.006 *5*
								α(K)=0.01167 *16*; α(L)=0.002182 *31*; α(M)=0.000491 *7*
								α(N)=0.0001123 *16*; α(O)=1.552×10^{-5} *22*; α(P)=6.54×10^{-7} *9*
								Mult.: α(K)exp allows E1 or E2; Δ$J^π$ suggests E2.
								Ice(K)=0.004 *3*.
509.139 *7*	0.125 *27*	1158.1185	(5/2$^+$)	648.9736	(7/2)$^+$			
509.772 *6*	0.047 *6*	1080.0395	(1/2,3/2)$^-$	570.2611	(1/2)$^-$			
^{x}510.39 *3*	0.041 *4*							
^{x}510.94 *3*	0.036 *4*							
^{x}511.47 *3*	0.037 *4*							
512.00 *5*	0.031 *5*	1140.8661	(3/2$^+$)	628.8377	(5/2)$^-$			
512.448 *5*	0.043 *4*	1218.3547	(5/2$^+$)	705.9105	(7/2)$^-$			
514.426 *5*	0.192 *24*	1088.0107	(3/2$^-$)	573.5847	(3/2)$^-$			
517.771 *11*	0.010 *1*	1088.0107	(3/2$^-$)	570.2611	(1/2)$^-$			
519.054 *4*	0.131 *13*	1103.0447	(3/2)$^-$	583.9965	5/2$^+$			
520.679 *6*	0.025 *2*	628.8377	(5/2)$^-$	108.1554	1/2$^-$			
524.202 *2*	0.46 *5*	1108.2008	(3/2)$^+$	583.9965	5/2$^+$	M1	0.0263 *4*	α(K)exp=0.032 *8*
								α(K)=0.02230 *31*; α(L)=0.00315 *4*; α(M)=0.000690 *10*
								α(N)=0.0001596 *22*; α(O)=2.345×10^{-5} *33*; α(P)=1.362×10^{-6} *19*
								Ice(K)=0.0120 *24*.
524.983 *4*	0.176 *18*	705.9105	(7/2)$^-$	180.9230	(5/2)$^-$			α(K)exp=0.083 *21*
								Mult.: M1+E2 from α(K)exp=0.02 in 1967Du05 using Iγ=0.6 *2*; but a(K)exp using Iγ here (1990Ka21) is too high to be consistent with any multipolarity.
								Ice(K)=0.0120 *24*.

$^{165}_{66}$Dy$_{99}$-19

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	α[d]	Comments
[x]528.855 *12*	0.026 *3*							
529.282 *4*	0.076 *8*	1158.1185	(5/2$^+$)	628.8377	(5/2)$^-$			
529.451 *14*	0.241 *25*	1103.0447	(3/2)$^-$	573.5847	(3/2)$^-$	M1,E2	0.019 *6*	α(K)exp=0.05 *4*; α(L12)exp=0.0051 *8* α(K)=0.016 *6*; α(L)=0.0025 *6*; α(M)=0.00055 *12* α(N)=0.000128 *28*; α(O)=1.8×10^{-5} *5*; α(P)=1.0×10^{-6} *4* Ice(K)=0.010 *7*, Ice(L12)=0.001.
532.748 *23*	0.010 *2*	1103.0447	(3/2)$^-$	570.2611	(1/2)$^-$			
533.494 *9*	0.34 *3*	533.4930	5/2$^-$	0.0	7/2$^+$			
534.617 *4*	0.45 *4*	1108.2008	(3/2)$^+$	573.5847	(3/2)$^-$			
535.767 *3*	0.74 *7*	1140.8661	(3/2$^+$)	605.0960	(3/2)$^-$			α(K)exp=0.016 *12* α(K)=0.016 *6*; α(L)=0.0025 *6* Ice(K)=0.010 *7*.
537.99[f] *3*	0.114[f] *18*	1108.2008	(3/2)$^+$	570.2611	(1/2)$^-$			
537.99[f] *3*	0.114[f] *18*	1166.8920	(3/2)$^-$	628.8377	(5/2)$^-$			
538.634 *3*	9.3 *10*	538.6349	3/2$^+$	0.0	7/2$^+$	[E2]	0.01252 *18*	α(K)exp=0.0102 *18*; α(L12)exp=0.0017 α(K)=0.01015 *14*; α(L)=0.001847 *26*; α(M)=0.000414 *6* α(N)=9.49×10^{-5} *13*; α(O)=1.317×10^{-5} *18*; α(P)=5.71×10^{-7} *8* Ice(K)=0.078 *5*, Ice(L12)=0.013. Mult.: assumed as the normalization reference with α(K)=0.0102 *2* from BrIcc for deducing conversion coefficients from relative I(ce) and relative Iγ.
[x]539.627 *15*	0.020 *3*							
541.402 *5*	0.227 *23*	1080.0395	(1/2,3/2)$^-$	538.6349	3/2$^+$			
[x]543.93 *3*	0.058 *6*							
[x]544.48[a] *9*								
[x]545.43 *3*	0.010 *3*							
546.123 *6*	0.067 *7*	1174.9524	(3/2,5/2)$^-$	628.8377	(5/2)$^-$			
546.543 *2*	0.39 *4*	1080.0395	(1/2,3/2)$^-$	533.4930	5/2$^-$	M1,E2	0.018 *6*	α(K)exp=0.015 *5* α(K)=0.015 *5*; α(L)=0.0023 *5*; α(M)=0.00051 *11* α(N)=0.000117 *26*; α(O)=1.7×10^{-5} *4*; α(P)=8.9×10^{-7} *34* Ice(K)=0.0048 *14*.
[x]547.197[a] *23*								
[x]548.73[a] *5*								
549.371 *3*	0.25 *3*	1088.0107	(3/2$^-$)	538.6349	3/2$^+$			
549.81 *3*	0.010 *1*	657.9990	(5/2)$^-$	108.1554	1/2$^-$			
[x]550.513 *16*	0.017 *2*							
[x]550.643 *25*	0.031 *4*							
551.814 *5*	0.055 *5*	1135.8118	(5/2$^-$)	583.9965	5/2$^+$			
[x]552.552[a] *17*								
553.002 *10*	0.036 *3*	1158.1185	(5/2$^+$)	605.0960	(3/2)$^-$			

From ENSDF

$^{165}_{66}$Dy$_{99}$-20

^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05 (continued)

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[b]	δ[b]	α[d]	Comments
[x]553.57[a] *6*									
554.521 *11*	0.020 *3*	1088.0107	(3/2$^-$)	533.4930	5/2$^-$				
556.938 *6*	0.31 *3*	737.8578	(7/2)$^-$	180.9230	(5/2)$^-$	E2(+M1)	>0.8	0.0149 *34*	α(K)exp=0.012 *3* α(K)=0.0123 *30*; α(L)=0.00199 *31*; α(M)=0.00044 *7* α(N)=0.000102 *15*; α(O)=1.44×10^{-5} *25*; α(P)=7.2×10^{-7} *19* Ice(K)=0.0031 *5*.
[x]558.56 *3*	0.008 *1*								
[x]559.00 *4*	0.005 *2*								
560.352 *7*	0.019 *1*	1218.3547	(5/2$^+$)	657.9990	(5/2)$^-$				
561.794 *4*	0.053 *5*	1166.8920	(3/2)$^-$	605.0960	(3/2)$^-$				
562.227 *5*	0.039 *5*	1135.8118	(5/2$^-$)	573.5847	(3/2)$^-$				
[x]563.04 *6*	0.005 *1*								
564.409 *2*	0.47 *5*	1103.0447	(3/2)$^-$	538.6349	3/2$^+$				
565.578 *3*	0.50 *5*	648.9736	(7/2)$^+$	83.3952	(9/2)$^+$	E2		0.01107 *15*	α(K)exp=0.0105 *23* α(K)=0.00901 *13*; α(L)=0.001605 *22*; α(M)=0.000360 *5* α(N)=8.24×10^{-5} *12*; α(O)=1.148×10^{-5} *16*; α(P)=5.09×10^{-7} *7* Ice(K)=0.0043 *6*.
567.318 *13*	0.039 *7*	1174.9524	(3/2,5/2)$^-$	607.6246	(7/2)$^-$				
[x]568.11 *7*	0.018 *5*								
569.566[f] *6*	0.82[f] *8*	1103.0447	(3/2)$^-$	533.4930	5/2$^-$				Mult.: also placed from 1108 level.
569.566[f] *6*	0.82[f] *8*	1108.2008	(3/2)$^+$	538.6349	3/2$^+$	M1		0.02133 *30*	α(K)exp=0.025 *5* α(K)=0.01807 *25*; α(L)=0.00255 *4*; α(M)=0.000557 *8* α(N)=0.0001290 *18*; α(O)=1.895×10^{-5} *27*; α(P)=1.102×10^{-6} *15* Ice(K)=0.0170 *17*, probably for a doublet in 1990Ka21.
570.604 *6*	0.60 *6*	1140.8661	(3/2$^+$)	570.2611	(1/2)$^-$				
[x]572.507 *18*	0.031 *6*								
574.122 *3*	0.156 *15*	1158.1185	(5/2$^+$)	583.9965	5/2$^+$				
574.705 *6*	0.043 *4*	1108.2008	(3/2)$^+$	533.4930	5/2$^-$				α(K)exp=0.09 *3* Mult.: M1+E2 from α(K)exp=0.023 using Iγ=0.13 *4* is inconsistent with E1+M2 required by ΔJ^π; deduced α(K)exp from Iγ here is too high to be consistent with M1+E2 or E1. Ice(K)=0.0030 *9*.
[x]579.14 *3*	0.013 *2*								
[x]579.98 *3*	0.011 *1*								

From ENSDF

$^{165}_{66}Dy_{99}$-21

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[b]	δ[b]	α[d]	Comments
583.994 4	3.1 3	583.9965	5/2$^+$	0.0	7/2$^+$	M1+E2	0.07 +5−4	0.01997 29	α(K)exp=0.0146 24; α(L)exp=0.0017 6; α(K)exp=0.0020 6 α(K)=0.01693 25; α(L)=0.002386 34; α(M)=0.000522 8 α(N)=0.0001207 17; α(O)=1.774×10^{-5} 26; α(P)=1.031×10^{-6} 15 Ice(K)=0.0370 22, Ice(L)=0.0044 13.
584.524 17	0.079 11	1158.1185	(5/2$^+$)	573.5847	(3/2)$^-$				
^{x}586.907 13	0.011 1								
^{x}588.97 4	0.007 2								
589.490 13	0.022 2	1218.3547	(5/2$^+$)	628.8377	(5/2)$^-$				
590.963 14	0.065 6	1174.9524	(3/2,5/2)$^-$	583.9965	5/2$^+$				
^{x}592.02 4	0.010 1								
593.282 12	0.028 3	1166.8920	(3/2)$^-$	573.5847	(3/2)$^-$				
^{x}594.86 8	0.006 1								
^{x}595.700 17	0.023 3								
596.626 3	0.62 7	1166.8920	(3/2)$^-$	570.2611	(1/2)$^-$	E2		0.00970 14	α(K)exp=0.0079 24 α(K)=0.00793 11; α(L)=0.001381 19; α(M)=0.000309 4 α(N)=7.08×10^{-5} 10; α(O)=9.90×10^{-6} 14; α(P)=4.50×10^{-7} 6 Ice(K)=0.004 1.
597.167 8	0.127 13	1135.8118	(5/2$^-$)	538.6349	3/2$^+$				
598.56 3	0.006 1	1256.502	(3/2)	657.9990	(5/2)$^-$				
^{x}600.470 23	0.010 1								
601.366 6	0.044 9	1174.9524	(3/2,5/2)$^-$	573.5847	(3/2)$^-$				
602.244 8	0.037 7	1140.8661	(3/2$^+$)	538.6349	3/2$^+$				
^{x}603.48 4	0.021 4								
^{x}605.02 3	0.006 1								
^{x}607.176 11	0.048 9								
^{x}607.960[a] 15									
610.79 4	0.010 2	1218.3547	(5/2$^+$)	607.6246	(7/2)$^-$				
^{x}612.130 24	0.016 3								
^{x}612.50 3									
613.259 3	0.37 7	1218.3547	(5/2$^+$)	605.0960	(3/2)$^-$				α(K)exp=0.011 6 Mult.: M1(+E2) suggested by 1967Du05 is inconsistent with E1+M2 required by ΔJ^π. Ice(K)=0.0032 16.
^{x}614.30 3	0.011 2								
^{x}617.04 3	0.008 1								
619.480 10	0.19 4	1158.1185	(5/2$^+$)	538.6349	3/2$^+$				

$^{165}_{66}Dy_{99}$-22

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[b]	δ[b]	α[d]	Comments
[x]621.812[a] *17*						M1,E2		0.013 *4*	α(K)=0.011 *4*; α(L)=0.0016 *4*; α(M)=0.00036 *9* α(N)=8.3×10^{-5} *20*; α(O)=1.20×10^{-5} *32*; α(P)=6.5×10^{-7} *24* Ice(K)=0.0021 *8* and Iγ=0.14 *4* in 1967Du05 gives α(K)exp=0.015.
[x]622.408 *6*	0.13 *3*								
[x]624.235 *23*	0.043 *11*								
[x]626.92 *3*	0.006 *1*								
[x]627.566 *11*	0.058 *11*								
[x]630.01 *6*	0.019 *6*								
[x]631.438 *21*	0.006 *1*								
[x]636.279 *14*	0.056 *18*								
636.41 *4*	0.043 *8*	1174.9524	(3/2,5/2)$^-$	538.6349	3/2$^+$				
[x]639.624 *24*	0.010 *3*								
641.441 *15*	0.027 *5*	1174.9524	(3/2,5/2)$^-$	533.4930	5/2$^-$				
[x]642.03 *5*	0.008 *2*								
[x]642.576 *15*	0.068 *14*								
644.768 *11*	0.031 *6*	1218.3547	(5/2$^+$)	573.5847	(3/2)$^-$				
[x]646.721 *19*	0.027 *5*								
[x]647.55 *6*	0.008 *2*								
[x]648.307 *13*	0.031 *6*								
648.962 *5*	0.27 *5*	648.9736	(7/2)$^+$	0.0	7/2$^+$	M1+E2	0.9 *+26−9*	0.012 *4*	α(K)exp=0.010 *3* α(K)=0.0101 *31*; α(L)=0.00150 *35*; α(M)=0.00033 *7* α(N)=7.6×10^{-5} *17*; α(O)=1.10×10^{-5} *27*; α(P)=6.0×10^{-7} *20* Ice(K)=0.0023 *6*.
[x]650.555 *9*	0.053 *11*								
651.43 *3*	0.046 *17*	1256.502	(3/2)	605.0960	(3/2)$^-$				
[x]651.733 *12*	0.031 *6*								
[x]654.11 *5*	0.003 *1*								
[x]656.248 *11*	0.040 *8*								
[x]658.40[a] *4*									
[x]659.78 *5*	0.032 *6*					M1		0.01474 *21*	α(K)exp=0.03 *2* α(K)=0.01250 *18*; α(L)=0.001753 *25*; α(M)=0.000383 *5* α(N)=8.87×10^{-5} *12*; α(O)=1.304×10^{-5} *18*; α(P)=7.60×10^{-7} *11* Ice(K)=0.0008 *5* for 657.9γ.
[x]663.24[a] *8*									
[x]665.287 *22*	0.011 *2*								

$^{165}_{66}$Dy$_{99}$-23

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J_i^π	E_f	J_f^π	Comments
[x]666.70 3	0.008 1					
[x]671.632 20	0.02 4					
[x]672.336 20	0.022 4					
672.90 19	0.018 5	1256.502	(3/2)	583.9965	$5/2^+$	
674.87 9	0.020 4	1380.885	($5/2^+$)	705.9105	$(7/2)^-$	
[x]676.33 3	0.010 2					
[x]678.283 18	0.017 3					
[x]680.12 3	0.008 1					
[x]682.38 10						
[x]683.77 4	0.008 1					
[x]684.936 25	0.022 4					
686.29 4	0.015 3	1256.502	(3/2)	570.2611	$(1/2)^-$	
[x]687.68 3	0.057 11					
[x]690.582 19	0.049 9					Ice(K)=0.0019 4.
[x]692.514 13	0.118 23					
[x]698.27 7	0.012 3					
[x]699.061 17	0.025 5					
[x]700.079 20	0.022 4					
[x]700.63 3	0.024 4					Ice(K)=0.00072 25.
704.29 4	0.013 2	1309.301	($3/2^-$,$5/2^-$)	605.0960	$(3/2)^-$	
[x]706.13 3	0.031 6					
[x]706.69 4	0.015 3					
[x]707.312 23	0.029 5					
[x]711.288 6	0.24 5					
[x]714.56 6	0.072 17					
[x]716.98 3	0.02 4					
717.80 4	0.039 9	1256.502	(3/2)	538.6349	$3/2^+$	
718.21 7	0.022 5	1376.3374	($3/2^+$)	657.9990	$(5/2)^-$	
[x]721.41 7	0.010 2					
[x]726.671 24	0.017 3					
[x]727.27 3	0.017 3					
[x]728.819 24	0.013 3					
[x]730.58 12	0.013 3					
[x]731.55 6	0.037 8					
731.871 23	0.039 7	1380.885	($5/2^+$)	648.9736	$(7/2)^+$	
742.264 15	0.037 7	1400.2735	($3/2^+$)	657.9990	$(5/2)^-$	
[x]742.79 6	0.015 3					
[x]743.74[a] 9						
[x]744.037 14	0.034 6					
[x]745.14 3	0.045 9					
[x]746.137 11	0.052 10					

γ(^{165}Dy) (continued)

E_γ [†]	I_γ [‡e]	E_i(level)	J^π_i	E_f	J^π_f
^{x}753.717 *14*	0.042 *8*				
754.298 *8*	0.22 *4*	1016.0752	(5/2$^+$)	261.7706	(7/2)$^-$
^{x}757.40 *3*	0.017 *4*				
^{x}759.11 *5*	0.015 *3*				
^{x}759.77 *5*	0.011 *2*				
^{x}763.03 *3*	0.014 *3*				
^{x}763.80 *4*	0.016 *3*				
^{x}766.761 *23*	0.022 *4*				
^{x}767.95 *9*	0.031 *7*				
^{x}768.95 *8*	0.048 *10*				
^{x}771.05 *4*	0.025 *5*				
775.71 *4*	0.018 *4*	1380.885	(5/2$^+$)	605.0960	(3/2)$^-$
^{x}776.639 *17*	0.037 *7*				
^{x}783.56 *3*	0.013 *2*				
^{x}786.49 *6*	0.032 *7*				
^{x}788.290 *18*	0.034 *6*				
790.58 *5*	0.011 *4*	976.784	(7/2,9/2)$^+$	186.0946	(11/2$^+$)
791.34 *6*	0.028 *6*	1440.470	(5/2$^+$)	648.9736	(7/2)$^+$
792.385 *20*	0.022 *4*	1376.3374	(3/2$^+$)	583.9965	5/2$^+$
^{x}793.77 *3*	0.025 *7*				
795.30 *6*	0.014 *3*	1400.2735	(3/2$^+$)	605.0960	(3/2)$^-$
^{x}796.946 *11*	0.072 *16*				
798.398 *7*	0.34 *7*	1456.398	(3/2)	657.9990	(5/2)$^-$
^{x}800.95 *5*	0.011 *3*				
^{x}801.973 *17*	0.101 *20*				
^{x}803.14 *5*	0.022 *7*				
805.32 *5*	0.017 *3*	1103.0447	(3/2)$^-$	297.6837	(7/2)$^-$
807.34 *9*	0.025 *5*	1380.885	(5/2$^+$)	573.5847	(3/2)$^-$
^{x}807.99[a] *3*					
^{x}809.86 *8*	0.024 *5*				
811.248 *11*	0.17 *4*	1416.3378	(3/2)	605.0960	(3/2)$^-$
^{x}812.80 *6*	0.017 *4*				
^{x}815.691 *24*	0.055 *11*				
816.272 *14*	0.088 *17*	1400.2735	(3/2$^+$)	583.9965	5/2$^+$
^{x}818.252 *16*	0.051 *10*				
^{x}819.56 *5*	0.027 *5*				
^{x}821.41 *5*	0.020 *4*				
^{x}824.02 *3*	0.022 *4*				
826.65 *3*	0.027 *5*	1400.2735	(3/2$^+$)	573.5847	(3/2)$^-$
827.57 *4*	0.040 *11*	1456.398	(3/2)	628.8377	(5/2)$^-$
828.569 *17*	0.090 *18*	911.9730	5/2$^+$	83.3952	(9/2)$^+$

γ(^{165}Dy) (continued)

E_γ [†]	I_γ [‡e]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [b]	α [d]	Comments
831.822 *9*	0.38 *8*	1016.0752	(5/2$^+$)	184.2545	5/2$^-$			
833.04 *4*	0.072 *14*	1482.060	(5/2$^-$)	648.9736	(7/2)$^+$			
^{x}835.09 *5*	0.020 *5*							
835.987 *23*	0.042 *9*	1464.8481	(3/2)$^-$	628.8377	(5/2)$^-$			
837.710 *22*	0.23 *5*	1376.3374	(3/2$^+$)	538.6349	3/2$^+$			
838.162 *25*	0.110 *22*	1135.8118	(5/2$^-$)	297.6837	(7/2)$^-$			
^{x}839.36 *9*	0.079 *21*							
^{x}840.52 *4*	0.070 *14*							
841.38 *5*	0.025 *5*	1103.0447	(3/2)$^-$	261.7706	(7/2)$^-$			
842.14 *6*	0.030 *6*	1380.885	(5/2$^+$)	538.6349	3/2$^+$			
842.73 *3*	0.061 *12*	1416.3378	(3/2)	573.5847	(3/2)$^-$			
846.058 *7*	0.24 *5*	1416.3378	(3/2)	570.2611	(1/2)$^-$			
847.44 *9*	0.018 *5*	1380.885	(5/2$^+$)	533.4930	5/2$^-$			
848.90 *11*	0.032 *13*	1456.398	(3/2)	607.6246	(7/2)$^-$			
850.288 *12*	0.116 *23*	1479.1319	(3/2$^-$,5/2$^-$)	628.8377	(5/2)$^-$			
851.38 *5*	0.044 *10*	1456.398	(3/2)	605.0960	(3/2)$^-$			
^{x}853.85 *9*	0.020 *5*							
^{x}854.95 *9*	0.017 *4*							
856.526 *22*	0.079 *16*	1440.470	(5/2$^+$)	583.9965	5/2$^+$			
^{x}857.61 *4*	0.058 *13*							
^{x}858.656 *16*	0.096 *19*							
860.61 *4*	0.130 *26*	1444.721	(3/2$^-$,5/2$^+$)	583.9965	5/2$^+$			
^{x}861.22 *8*	0.037 *8*							
^{x}861.81 *6*	0.020 *5*							
^{x}865.92 *3*	0.029 *6*							
^{x}866.590 *21*	0.046 *10*							
^{x}867.958 *14*	0.061 *13*							
871.09 *3*	0.027 *5*	1444.721	(3/2$^-$,5/2$^+$)	573.5847	(3/2)$^-$			
872.398 *11*	0.17 *3*	1456.398	(3/2)	583.9965	5/2$^+$			
^{x}874.229 *22*	0.070 *14*							
^{x}876.812 *15*	0.064 *13*							
^{x}877.78 *3*	0.051 *10*							
880.839 *22*	0.039 *8*	1464.8481	(3/2)$^-$	583.9965	5/2$^+$			
882.833[f] *13*	0.124[f] *25*	1416.3378	(3/2)	533.4930	5/2$^-$			
882.833[f] *13*	0.124[f] *25*	1456.398	(3/2)	573.5847	(3/2)$^-$			
886.09 *3*	0.100 *20*	1456.398	(3/2)	570.2611	(1/2)$^-$			
^{x}888.88 *7*	0.025 *6*							
891.319 *25*	0.15 *3*	1464.8481	(3/2)$^-$	573.5847	(3/2)$^-$			
893.421 *9*	0.30 *6*	976.784	(7/2,9/2)$^+$	83.3952	(9/2)$^+$	M1	0.00698 *10*	α(K)exp=0.006 *5* α(K)=0.00593 *8*; α(L)=0.000823 *12*; α(M)=0.0001796 *25* α(N)=4.16×10^{-5} *6*; α(O)=6.12×10^{-6} *9*; α(P)=3.58×10^{-7} *5*

From ENSDF

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	δ[b]	α[d]	Comments
									Ice(K)=0.002 1. E_γ: poor-fit; level-energy difference=893.387.
^{x}895.34 5	0.073 15								
^{x}898.43 3	0.024 5								
^{x}901.35 4	0.022 4								
903.736 19	0.128 26	1088.0107	(3/2$^-$)	184.2545	5/2$^-$				
905.527 14	0.28 6	1479.1319	(3/2$^-$,5/2$^-$)	573.5847	(3/2)$^-$				Ice(K)=0.014 4.
906.066 20	0.47 10	1444.721	(3/2$^-$,5/2$^+$)	538.6349	3/2$^+$				
907.096 18	0.14 3	1088.0107	(3/2$^-$)	180.9230	(5/2)$^-$				
911.966 4	3.2 6	911.9730	5/2$^+$	0.0	7/2$^+$	M1+E2	>0.4	0.0050 13	α(K)exp=0.0038 14; α(K)=0.0042 11; α(L)=0.00060 13; α(M)=0.000133 29; α(N)=3.1×10^{-5} 7; α(O)=4.5×10^{-6} 10; α(P)=2.5×10^{-7} 7; Ice(K)=0.010 3.
^{x}916.26 5	0.034 8								
^{x}916.947 13	0.16 3								
918.803 14	0.16 3	1103.0447	(3/2)$^-$	184.2545	5/2$^-$				
^{x}919.979 11	0.26 5								Ice(K)=0.0078 24.
920.666 11	0.29 6	1218.3547	(5/2$^+$)	297.6837	(7/2)$^-$				
921.442 22	0.14 3	1080.0395	(1/2,3/2)$^-$	158.5888	(3/2)$^-$				
922.113 13	0.20 4	1103.0447	(3/2)$^-$	180.9230	(5/2)$^-$				
^{x}922.79 3	0.067 14								
923.96 6	0.058 13	1108.2008	(3/2)$^+$	184.2545	5/2$^-$				
926.187 11	0.33 7	1464.8481	(3/2)$^-$	538.6349	3/2$^+$				
927.22 3	0.111 23	1108.2008	(3/2)$^+$	180.9230	(5/2)$^-$				
^{x}928.74 8	0.034 11								
929.399 11	0.47 9	1088.0107	(3/2$^-$)	158.5888	(3/2)$^-$				
931.351 10	0.49 10	1464.8481	(3/2)$^-$	533.4930	5/2$^-$	M1(+E2)	<0.8	0.0058 5	α(K)exp=0.0072 20; α(K)exp=0.0052 29; α(K)=0.0049 5; α(L)=0.00069 6; α(M)=0.000150 13; α(N)=3.46×10^{-5} 29; α(O)=5.1×10^{-6} 4; α(P)=2.94×10^{-7} 30; Ice(K)=0.0029 4, Ice(K)=0.0021 10.
932.657 11	0.68 14	1016.0752	(5/2$^+$)	83.3952	(9/2)$^+$				
^{x}933.850 14	0.49 10								
^{x}937.36 4	0.067 13								
943.55 10	0.037 11	1482.060	(5/2$^-$)	538.6349	3/2$^+$				
944.433 7	0.82 16	1103.0447	(3/2)$^-$	158.5888	(3/2)$^-$				
945.82 12	0.037 8	1479.1319	(3/2$^-$,5/2$^-$)	533.4930	5/2$^-$				
949.622 21	0.088 17	1108.2008	(3/2)$^+$	158.5888	(3/2)$^-$				
^{x}950.569 19	0.089 19								
951.60 5	0.052 11	1135.8118	(5/2$^-$)	184.2545	5/2$^-$				
^{x}952.43 8	0.025 6								
^{x}953.81 3	0.077 16								

$^{165}_{66}$Dy$_{99}$-27

^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05 (continued)

γ(^{165}Dy) (continued)

E$_\gamma$[†]	I$_\gamma$[‡e]	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$	Mult.[b]	δ[b]	α[d]	Comments
954.865 *11*	0.43 *9*	1135.8118	(5/2$^-$)	180.9230	(5/2)$^-$				
^{x}958.66 *5*	0.025 *6*								
^{x}961.21 *3*	0.097 *19*								
^{x}962.19 *5*	0.041 *8*								
^{x}965.316 *12*	0.24 *5*								
^{x}967.67 *5*	0.055 *11*								
971.85 *3*	0.046 *9*	1080.0395	(1/2,3/2)$^-$	108.1554	1/2$^-$				
^{x}974.03 *7*	0.053 *11*								
976.66 *19*	0.14 *4*	976.784	(7/2,9/2)$^+$	0.0	7/2$^+$				
977.18 *5*	0.49 *10*	1135.8118	(5/2$^-$)	158.5888	(3/2)$^-$				
979.834 *21*	0.99 *20*	1088.0107	(3/2$^-$)	108.1554	1/2$^-$				
982.257 *24*	0.61 *12*	1140.8661	(3/2$^+$)	158.5888	(3/2)$^-$			0.0044 *13*	α(K)exp=0.0078 *22* α(K)=0.0037 *11*; α(L)=0.00053 *14* Ice(K)=0.0039 *6*. Mult.: α(K)exp gives M1, which is inconsistent with $\Delta\pi$=(yes).
^{x}985.34 *5*	0.065 *13*								
^{x}986.696 *20*	0.33 *7*								
^{x}988.15 *9*	0.032 *8*								
^{x}989.719 *21*	0.25 *5*								
990.673 *25*	0.16 *3*	1174.9524	(3/2,5/2)$^-$	184.2545	5/2$^-$				
994.01 *3*	0.29 *6*	1174.9524	(3/2,5/2)$^-$	180.9230	(5/2)$^-$	M1(+E2)	<1.2	0.0047 *7*	α(K)exp=0.011 *4* α(K)=0.0040 *6*; α(L)=0.00056 *7*; α(M)=0.000122 *16* α(N)=2.8$\times10^{-5}$ *4*; α(O)=4.1$\times10^{-6}$ *6*; α(P)=2.4$\times10^{-7}$ *4* Ice(K)=0.0027 *5*.
994.870 *8*	1.36 *27*	1103.0447	(3/2)$^-$	108.1554	1/2$^-$				
^{x}1003.48 *4*	0.053 *11*								
^{x}1005.602 *14*	0.27 *5*								
^{x}1006.53 *6*	0.063 *14*								
1008.272 *17*	0.31 *6*	1166.8920	(3/2)$^-$	158.5888	(3/2)$^-$				
^{x}1011.85 *4*	0.077 *16*								
^{x}1015.37 *6*	0.10 *3*								
1016.100 *15*	1.04 *22*	1016.0752	(5/2$^+$)	0.0	7/2$^+$				α(K)exp=0.0020 *6* Ice(K)=0.0017 *3*.
1016.53 *8*	0.18 *6*	1174.9524	(3/2,5/2)$^-$	158.5888	(3/2)$^-$				α(K)exp=0.012 *5* Mult.: M1(+E2) from 1967Du05 using their Iγ=0.4 *1*, but deduced α(K)exp using Iγ here (1990Ka21) is too high to be consistent with M1, E1, or E2. Ice(K)=0.0017 *3*.
^{x}1018.41 *6*	0.060 *14*								
^{x}1019.39 *5*	0.081 *18*								

γ(^{165}Dy) (continued)

E_γ †	I_γ ‡e	E_i(level)	J_i^π	E_f	J_f^π	Comments
ˣ1021.50 4	0.067 14					
ˣ1022.46 7	0.105 21					
ˣ1026.852 17	0.13 3					
1027.80 15	0.024 6	1135.8118	(5/2⁻)	108.1554	1/2⁻	
ˣ1030.81 4	0.048 10					
1032.82 5	0.048 10	1140.8661	(3/2⁺)	108.1554	1/2⁻	
ˣ1035.64 8	0.027 6					
ˣ1037.485 16	0.27 6					
ˣ1039.88 10	0.046 11					
ˣ1042.91 4	0.067 14					
1047.52 3	0.48 10	1309.301	(3/2⁻,5/2⁻)	261.7706	(7/2)⁻	
ˣ1049.65 4	0.12 3					
ˣ1055.89 4	0.080 16					
ˣ1057.21 6	0.083 18					α(K)exp=0.022 10 Mult.: M1(+E2) from 1967Du05 using their Iγ=0.3 1, but deduced α(K)exp using Iγ here (1990Ka21) is too high to be consistent with M1, E1, or E2. Ice(K)=0.0015 6.
ˣ1058.355 17	1.03 21					
ˣ1060.882 24	0.15 3					
ˣ1064.222 16	0.19 4					
1072.212 9	1.7 3	1256.502	(3/2)	184.2545	5/2⁻	Ice(K)=0.0047 14. E_γ: poor-fit; level-energy difference=1072.244.
1074.75 5	0.111 22	1158.1185	(5/2⁺)	83.3952	(9/2)⁺	
ˣ1077.85 4	0.13 3					
1083.175 15	0.39 8	1380.885	(5/2⁺)	297.6837	(7/2)⁻	
ˣ1088.02 5	0.096 20					
ˣ1088.88 5	0.069 15					
ˣ1090.24 4	0.088 18					
ˣ1097.56 5	0.071 15					
ˣ1098.39 11	0.051 10					
ˣ1100.81 11	0.051 12					
ˣ1104.14 8	0.057 13					
ˣ1105.64 5	0.086 18					
1108.204 13	0.73 15	1108.2008	(3/2)⁺	0.0	7/2⁺	
ˣ1109.56 4	0.40 8					
ˣ1112.46 10	0.060 12					
ˣ1113.90 6	0.062 13					
1121.57 13	0.082 17	1482.060	(5/2⁻)	360.6306	(9/2)⁻	
ˣ1122.83 7	0.091 19					
1125.032 20	0.29 6	1309.301	(3/2⁻,5/2⁻)	184.2545	5/2⁻	
1128.40 10	0.055 17	1309.301	(3/2⁻,5/2⁻)	180.9230	(5/2)⁻	

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J_i^π	E_f	J_f^π	Comments
[x]1131.25 *3*	0.17 *3*					
[x]1132.47 *3*	0.19 *4*					
[x]1134.38 *4*	0.058 *12*					
1136.43 *4*	0.060 *12*	1320.810	$(1/2^-,3/2,5/2^-)$	184.2545	$5/2^-$	
1139.77 *8*	0.027 *6*	1320.810	$(1/2^-,3/2,5/2^-)$	180.9230	$(5/2)^-$	
1142.73 *8*	0.043 *9*	1440.470	$(5/2^+)$	297.6837	$(7/2)^-$	
[x]1144.61 *5*	0.058 *12*					
[x]1146.07 *9*	0.029 *6*					
[x]1148.13[a] *7*						
[x]1149.27 *17*	0.015 *4*					
1150.55 *8*	0.032 *7*	1309.301	$(3/2^-,5/2^-)$	158.5888	$(3/2)^-$	
[x]1151.61 *8*	0.037 *8*					
[x]1154.91 *7*	0.062 *13*					
1158.08 *3*	0.34 *7*	1158.1185	$(5/2^+)$	0.0	$7/2^+$	
[x]1159.15 *9*	0.067 *14*					
[x]1160.63 *8*	0.053 *11*					
1161.83 *10*	0.057 *12*	1320.810	$(1/2^-,3/2,5/2^-)$	158.5888	$(3/2)^-$	E_γ: poor-fit; level-energy difference=1162.217.
[x]1162.99 *1*	0.034 *8*					
[x]1166.46 *21*	0.034 *9*					
[x]1170.83 *4*	0.062 *12*					
1178.46 *4*	1.02 *21*	1337.103	$(1/2^+,3/2^+)$	158.5888	$(3/2)^-$	
1181.32 *6*	0.15 *3*	1479.1319	$(3/2^-,5/2^-)$	297.6837	$(7/2)^-$	
1182.98 *5*	0.18 *4*	1444.721	$(3/2^-,5/2^+)$	261.7706	$(7/2)^-$	
1184.31 *3*	0.21 *4*	1482.060	$(5/2^-)$	297.6837	$(7/2)^-$	
[x]1185.46 *6*	0.110 *24*					
[x]1186.52 *13*	0.050 *14*					
[x]1189.761 *24*	0.17 *4*					
[x]1191.32 *8*	0.086 *18*					
1192.18 *7*	0.072 *16*	1376.3374	$(3/2^+)$	184.2545	$5/2^-$	
1195.44 *17*	0.21 *5*	1376.3374	$(3/2^+)$	180.9230	$(5/2)^-$	
[x]1198.90 *7*	0.065 *14*					
1199.97 *9*	0.066 *18*	1380.885	$(5/2^+)$	180.9230	$(5/2)^-$	
1201.15 *11*	0.041 *11*	1309.301	$(3/2^-,5/2^-)$	108.1554	$1/2^-$	
1203.19 *6*	0.16 *3*	1464.8481	$(3/2)^-$	261.7706	$(7/2)^-$	
[x]1206.29 *6*	0.072 *15*					
1212.51 *21*	0.034 *8*	1320.810	$(1/2^-,3/2,5/2^-)$	108.1554	$1/2^-$	
[x]1216.25 *4*	0.20 *4*					
1217.72 *5*	0.15 *3*	1376.3374	$(3/2^+)$	158.5888	$(3/2)^-$	
1219.23 *3*	0.25 *6*	1400.2735	$(3/2^+)$	180.9230	$(5/2)^-$	E_γ: poor-fit; level-energy difference=1219.346.
1220.32 *7*	0.098 *22*	1482.060	$(5/2^-)$	261.7706	$(7/2)^-$	
[x]1221.49 *9*	0.107 *25*					

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J_i^π	E_f	J_f^π	Comments
1222.32 *6*	0.21 *4*	1380.885	(5/2$^+$)	158.5888	(3/2)$^-$	
[x]1223.75 *4*	0.20 *4*					
[x]1225.25 *4*	0.19 *4*					
[x]1226.61 *5*	0.093 *19*					
[x]1227.99 *9*	0.091 *19*					
1228.94 *5*	0.16 *3*	1337.103	(1/2$^+$,3/2$^+$)	108.1554	1/2$^-$	
[x]1230.25 *7*	0.069 *15*					
[x]1232.01 *4*	0.22 *5*					
[x]1240.43 *5*	0.13 *3*					
1241.64 *4*	0.32 *6*	1400.2735	(3/2$^+$)	158.5888	(3/2)$^-$	
[x]1246.77 *6*	0.081 *17*					
1256.10 *9*	0.23 *5*	1440.470	(5/2$^+$)	184.2545	5/2$^-$	
[x]1256.62 *15*	0.26 *8*					
1257.68 *5*	0.34 *7*	1416.3378	(3/2)	158.5888	(3/2)$^-$	
[x]1259.06[a] *7*						
1260.531 *19*	0.61 *13*	1444.721	(3/2$^-$,5/2$^+$)	184.2545	5/2$^-$	E_γ: poor-fit; level-energy difference=1260.461.
[x]1261.58[a] *13*						
[x]1263.25 *9*	0.102 *23*					
[x]1264.55 *15*	0.057 *17*					
1268.13 *3*	0.23 *5*	1376.3374	(3/2$^+$)	108.1554	1/2$^-$	
1272.55 *24*	0.108 *22*	1456.398	(3/2)	184.2545	5/2$^-$	
[x]1273.84 *6*	0.114 *24*					
1275.42 *12*	0.122 *25*	1456.398	(3/2)	180.9230	(5/2)$^-$	
[x]1278.27 *7*	0.069 *15*					
1280.63 *4*	0.18 *5*	1464.8481	(3/2)$^-$	184.2545	5/2$^-$	
[x]1282.09 *5*	0.13 *3*					
[x]1283.34 *14*	0.034 *9*					
[x]1285.93 *7*	0.17 *4*					
[x]1286.97 *10*	0.12 *3*					
[x]1289.22 *10*	0.053 *13*					
1292.03 *4*	0.72 *14*	1400.2735	(3/2$^+$)	108.1554	1/2$^-$	
1297.87 *4*	0.30 *6*	1456.398	(3/2)	158.5888	(3/2)$^-$	
[x]1300.25 *9*	0.083 *18*					
1301.34 *10*	0.096 *21*	1482.060	(5/2$^-$)	180.9230	(5/2)$^-$	
[x]1302.94 *9*	0.11 *3*					
[x]1306.20 *8*	0.086 *20*					
[x]1316.79 *4*	0.19 *4*					
1320.45 *4*	0.21 *4*	1479.1319	(3/2$^-$,5/2$^-$)	158.5888	(3/2)$^-$	
[x]1322.16 *7*	0.114 *25*					
1323.44 *8*	0.15 *3*	1482.060	(5/2$^-$)	158.5888	(3/2)$^-$	
[x]1325.8 *3*	0.13 *3*					

$^{165}_{66}$Dy$_{99}$-31

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	α[d]	Comments
[x]1338.97 *13*	0.058 *15*							
[x]1343.13 *7*	0.12 *3*							
[x]1344.24 *17*	0.063 *18*							
[x]1345.58 *5*	0.19 *4*							
[x]1347.01 *11*	0.062 *15*							
[x]1349.22 *5*	0.27 *6*					M1,E2	0.0022 *5*	α(K)exp=0.0021 *9* α(K)=0.0018 *4*; α(L)=0.00025 *5*; α(M)=5.5×10^{-5} *11* α(N)=1.27×10^{-5} *26*; α(O)=1.9×10^{-6} *4*; α(P)=1.07×10^{-7} *26*; α(IPF)=3.20×10^{-5} *24* Ice(K)=0.00046 *20*.
[x]1350.40 *14*	0.089 *20*							
[x]1351.85 *6*	0.105 *22*							
[x]1354.69[a] *14*								
1370.92 *3*	0.28 *6*	1479.1319	(3/2⁻,5/2⁻)	108.1554	1/2⁻			
1373.53 *17*	0.058 *16*	1482.060	(5/2⁻)	108.1554	1/2⁻			
[x]1374.55 *13*	0.13 *3*							
[x]1378.26 *6*	0.14 *3*							
[x]1380.24 *3*	0.36 *7*							
[x]1383.95 *11*	0.079 *18*							
[x]1386.2 *3*	0.025 *9*							
[x]1391.691 *23*	0.56 *12*							
[x]1396.62 *5*	0.28 *6*							
[x]1398.55 *4*	0.34 *7*							
[x]1401.40 *3*	0.51 *11*					M1	2.43×10^{-3} *3*	α(K)exp=0.0026 *7* α(K)=0.002023 *28*; α(L)=0.000277 *4*; α(M)=6.03×10^{-5} *8* α(N)=1.396×10^{-5} *20*; α(O)=2.056×10^{-6} *29*; α(P)=1.214×10^{-7} *17*; α(IPF)=5.01×10^{-5} *7* Ice(K)=0.0011 *2*.
[x]1405.51 *15*	0.076 *20*							
[x]1407.68 *11*	0.11 *3*							
[x]1409.17 *18*	0.074 *20*							
[x]1410.907 *22*	0.88 *18*							
[x]1412.16 *12*	0.086 *21*							
[x]1418.87 *6*	0.14 *3*							
[x]1421.02 *6*	0.121 *24*							
[x]1428.14 *25*	0.100 *23*							
[x]1429.60 *20*	0.058 *16*							
[x]1433.247 *25*	0.52 *11*							
[x]1435.05 *12*	0.102 *23*							
[x]1436.93 *11*	0.18 *4*							

$^{165}_{66}Dy_{99}$-32

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	Mult.[b]	δ[b]	α[d]	Comments
^{x}1438.41 *19*	0.14 *3*					
^{x}1442.18 *22*	0.046 *14*					
^{x}1447.09 *10*	0.100 *21*					
^{x}1448.68 *8*	0.122 *24*					
^{x}1450.50 *15*	0.077 *17*					
^{x}1451.83 *19*	0.107 *23*					
^{x}1453.70 *18*	0.124 *25*					
^{x}1458.76 *8*	0.122 *20*					
^{x}1464.20 *10*	0.102 *23*					
^{x}1466.97 *24*	0.115 *25*					
^{x}1470.646 *8*	0.14 *3*					
^{x}1475.859 *9*	0.17 *4*					
^{x}1477.70 *10*	0.25 *5*					
^{x}1479.90 *10*	0.112 *25*					
^{x}1483.68 *4*	0.86 *18*		M1(+E2)	<1.1	0.00197 *19*	α(K)exp=0.0017 *3*; α(L)exp=0.00025 *7* α(K)=0.00161 *16*; α(L)=0.000221 *21*; α(M)=4.8×10^{-5} *5* α(N)=1.11×10^{-5} *11*; α(O)=1.64×10^{-6} *16*; α(P)=9.6×10^{-8} *10*; α(IPF)=7.60×10^{-5} *33* Ice(K)=0.0012 *2*, Ice(L)=0.00018 *4*.
^{x}1509.38 *12*	0.095 *22*					
^{x}1511.87 *20*	0.27 *7*					
^{x}1512.75 *11*	0.38 *10*					
^{x}1514.35 *21*	0.14 *3*					
^{x}1517.11 *14*	0.17 *4*					
^{x}1521.32 *10*	0.13 *3*					
^{x}1523.59 *11*	0.15 *3*					
^{x}1526.12 *24*	0.072 *25*					
^{x}1528.52 *10*	0.50 *10*		M1,E2		0.00172 *32*	α(K)exp=0.0012 *4* α(K)=0.00138 *27*; α(L)=0.000190 *35*; α(M)=4.1×10^{-5} *8* α(N)=9.6×10^{-6} *18*; α(O)=1.41×10^{-6} *27*; α(P)=8.2×10^{-8} *17*; α(IPF)=9.0×10^{-5} *7* Ice(K)=0.00048 *17*.
^{x}1531.27 *23*	0.095 *23*					
^{x}1533.04 *6*	0.36 *7*					
^{x}1534.67 *22*	0.17 *4*					
^{x}1539.12 *8*	0.20 *4*					
^{x}1540.59 *20*	0.11 *3*					
^{x}1542.47 *6*	0.28 *6*					
^{x}1543.96 *16*	0.083 *21*					
^{x}1551.01 *9*	0.14 *3*					
^{x}1553.09 *7*	0.32 *7*					
^{x}1554.74 *8*	0.17 *4*					

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[b]	α[d]	Comments
[x]1559.5 *3*	0.09 *3*							
[x]1560.73 *17*	0.18 *4*							
[x]1562.49 *14*	0.26 *6*							
[x]1568.07 *10*	0.24 *5*							
[x]1570.60 *13*	0.077 *18*							
[x]1573.72 *6*	0.41 *8*							
[x]1580.23 *17*	0.100 *23*							
[x]1585.52 *12*	0.16 *4*							
[x]1589.62 *7*	0.41 *8*							
[x]1591.50 *11*	0.19 *4*							
[x]1593.04 *21*	0.14 *3*							
[x]1595.66 *8*	0.39 *8*					E1	0.000818 *11*	α(K)exp=0.00066 *25* α(K)=0.000469 *7*; α(L)=6.12×10^{-5} *9*; α(M)=1.325×10^{-5} *19* α(N)=3.06×10^{-6} *4*; α(O)=4.49×10^{-7} *6*; α(P)=2.63×10^{-8} *4*; α(IPF)=0.000271 *4* Ice(K)=0.00021 *6*.
[x]1598.40 *12*	0.18 *4*							
[x]1599.89 *13*	0.14 *3*							
[x]1604.52 *6*	0.45 *9*							
[x]1610.91 *12*	0.22 *5*							
[x]1613.20 *16*	0.20 *5*							
[x]1616.66 *16*	0.28 *6*							
[x]1628.72 *7*	0.29 *6*							
[x]1633.22 *7*	0.32 *7*							
[x]1646.42 *7*	0.46 *9*							α(K)exp=0.0012 *4* Ice(K)=0.00047 *9*.
[x]1671.72 *7*	0.59 *14*							α(K)exp=0.00087 *25*; α(L)exp=0.00014 *4* Ice(K)=0.00042 *8*, Ice(L)=0.000070 *14*.
[x]1691.67 *13*	0.38 *8*							
[x]1706.23 *22*	0.29 *6*					M1,E2	0.00145 *23*	α(K)exp=0.0010 *3* α(K)=0.00110 *19*; α(L)=0.000150 *25*; α(M)=3.3×10^{-5} *5* α(N)=7.5×10^{-6} *13*; α(O)=1.11×10^{-6} *19*; α(P)=6.5×10^{-8} *12*; α(IPF)=0.000165 *14* Mult.: E1 (1967Du05). Ice(K)=0.00024 *5*.
[x]1717.14 *7*	0.75 *15*							
[x]1722.06 *9*	0.75 *15*					M1,E2		α(K)exp=0.00078 *22* Mult.: E1 (1967Du05). Ice(K)=0.00048 *10*.
[x]1736.61 *24*	0.39 *9*							
1736.8[#]		(5715.78)	1/2$^+$	3979.08	(1/2,3/2,5/2$^+$)			

From ENSDF

γ(^{165}Dy) (continued)

E_γ [†]	I_γ [‡e]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [b]	α [d]	Comments
[x]1738.00 *10*	0.50 *11*					(E1)	0.000852 *12*	α(K)exp=0.00063 *18* α(K)=0.000407 *6*; α(L)=5.30×10^{-5} *7*; α(M)=1.146×10^{-5} *16* α(N)=2.65×10^{-6} *4*; α(O)=3.89×10^{-7} *5*; α(P)=2.286×10^{-8} *32*; α(IPF)=0.000377 *5* Ice(K)=0.00026 *8*.
[x]1781.34 *8*	0.52 *11*					M1	1.58×10^{-3} *2*	α(K)exp=0.0014 *4*; α(L)exp=0.00021 *10* α(K)=0.001160 *16*; α(L)=0.0001575 *22*; α(M)=3.43×10^{-5} *5* α(N)=7.94×10^{-6} *11*; α(O)=1.170×10^{-6} *16*; α(P)=6.93×10^{-8} *10*; α(IPF)=0.0002181 *31* Ice(K)=0.00060 *18*, Ice(L)=0.00009 *4*. Ice(K)=0.00060 *18*, Ice(L)=0.00009 *4*.
[x]1835.39 *12*	0.50 *12*							
[x]1855.99 *12*	0.44 *10*							
[x]1862.18 *10*	0.34 *8*							
[x]1866.18 *7*	0.56 *12*							
1866.6[#]		(5715.78)	1/2$^+$	3849.24	(1/2,3/2,5/2$^+$)			
[x]1879.64 *13*	0.33 *7*							
[x]1898.98 *12*	0.19 *5*							
1904.2[#]		2475.80	(1/2,3/2)	570.2611	(1/2)$^-$			
[x]1929[@] *2*								
1972.9[#]		2547.53	(1/2,3/2)	573.5847	(3/2)$^-$			
2036.9[#]		2610.04	(1/2,3/2)	573.5847	(3/2)$^-$			
2064.3[#]		(5715.78)	1/2$^+$	3651.47	(1/2,3/2,5/2$^+$)			
2088.5[#]		2271.21	(1/2$^-$,3/2)	180.9230	(5/2)$^-$			Ice(K)=0.00017 *3* for 2095; E1 (1967Du05). E_γ: poor-fit; level-energy difference=2090.3.
2113.4[#]		2271.21	(1/2$^-$,3/2)	158.5888	(3/2)$^-$			Ice(K)=0.00050 *5* for 2115; E1 (1967Du05).
2128.3[#]		(5715.78)	1/2$^+$	3587.41	(1/2$^-$,3/2,5/2$^+$)			
2134.7[#]		2705.65	(1/2,3/2)	570.2611	(1/2)$^-$			Ice(K)=0.00043 *13* for 2132; E1 (1967Du05).
2163.7[#]		2271.21	(1/2$^-$,3/2)	108.1554	1/2$^-$			
2167.9[#]		2705.65	(1/2,3/2)	538.6349	3/2$^+$			Ice(K)=0.00060 *24*, Ice(L)=0.00018 *9* for 2165; E1,E2,M1 (1967Du05).
2175.3[#]		(5715.78)	1/2$^+$	3539.44	(1/2,3/2)			
2192.2[#]		2765.37	(1/2$^-$,3/2)	573.5847	(3/2)$^-$			Ice(K)=0.00035 *14* for 2193; E1,E2,M1 (1967Du05).
2221.8[#]		2793.15	(1/2,3/2)	570.2611	(1/2)$^-$			
2227.8[#]		2765.37	(1/2$^-$,3/2)	538.6349	3/2$^+$			Ice(K)=0.00218 *11* for 2226.

$^{165}_{66}$Dy$_{99}$-35

γ(^{165}Dy) (continued)

E_γ †	E_i(level)	J_i^π	E_f	J_f^π	Comments
2241.0#	(5715.78)	1/2+	3473.72	(1/2,3/2)	Ice(K)=0.00027 *8* for 2242; E1 (1967Du05).
2260.2#	(5715.78)	1/2+	3455.39	(1/2,3/2)	
2271.9#	(5715.78)	1/2+	3443.49	(1/2−,3/2,5/2+)	
2281.9#	2852.64	(1/2,3/2)	570.2611	(1/2)−	
2293.5#	(5715.78)	1/2+	3422.01	(1/2,3/2)	
x2299& *3*					Ice(K)=0.00029 *9* for 2299; E1 (1967Du05).
2304.2#	2874.44	(1/2,3/2)	570.2611	(1/2)−	
2314.6#	2852.64	(1/2,3/2)	538.6349	3/2+	Ice(K)=0.00054 *16* for 2317; E1,E2 (1967Du05).
x2331& *3*					Ice(K)=0.00023 *7* for 2334; E1 (1967Du05).
2336.0#	(5715.78)	1/2+	3379.40	(1/2−,3/2)	
x2341& *2*					Ice(K)=0.00015 *8* for 2344; E1 (1967Du05).
2367.9#	2475.80	(1/2,3/2)	108.1554	1/2−	Ice(K)=0.00040 *12* for 2370; M1,E2,(E1) (1967Du05).
2370.7#	2943.55	(1/2,3/2)	573.5847	(3/2)−	
2389.7#	2547.53	(1/2,3/2)	158.5888	(3/2)−	Ice(K)=0.00029 *16* for 2395; E1 (1967Du05).
x2406& *1*					Ice(K)=0.00035 *18* for 2414; E1 (1967Du05).
2412.3#	2982.74	(1/2−,3/2)	570.2611	(1/2)−	
x2422& *2*					Ice(K)=0.0006 *3* for 2417; E1 (1967Du05).
2439.6#	2547.53	(1/2,3/2)	108.1554	1/2−	
x2452& *4*					Ice(K)=0.0006 *3*, Ice(L)=0.00009 *5* for 2451; E1,M1,E2 (1967Du05).
2458.7#	(5715.78)	1/2+	3257.61	(1/2−,3/2)	
2475.8#	3014.02	(1/2−,3/2,5/2+)	538.6349	3/2+	
2478.9#	3051.82	(1/2−,3/2)	573.5847	(3/2)−	
2501.5#	2610.04	(1/2,3/2)	108.1554	1/2−	Ice(K)=0.00042 *21* for 2509; E1,E2,(M1) (1967Du05).
x2510& *4*					
2521.6#	(5715.78)	1/2+	3193.94	(1/2,3/2,5/2+)	
x2529& *4*					Ice(K)=0.00030 *18* for 2532; E1,E2,(M1) (1967Du05).
2546.0#	2705.65	(1/2,3/2)	158.5888	(3/2)−	
2551.9#	3123.44	(1/2,3/2)	570.2611	(1/2)−	Ice(K)=0.00033 *17*, Ice(L)=0.00007 *4* for 2555; E1,E2,(M1) (1967Du05).
x2567@ *4*					
2583.1#	2765.37	(1/2−,3/2)	180.9230	(5/2)−	
2591.3#	(5715.78)	1/2+	3123.44	(1/2,3/2)	Ice(K)=0.00027 *14* for 2595 (1967Du05).
x2596& *4*					
2603.4#	2783.72	(1/2−,3/2)	180.9230	(5/2)−	

$^{165}_{66}Dy_{99}$-36

γ(^{165}Dy) (continued)

E_γ †	E_i(level)	J^π_i	E_f	J^π_f	Comments
2606.0#	2765.37	(1/2⁻,3/2)	158.5888	(3/2)⁻	
x2613& *3*					Ice(K)=0.00030 *15* for 2612; E1,E2,(M1) (1967Du05).
x2626& *5*					
2634.6#	2793.15	(1/2,3/2)	158.5888	(3/2)⁻	Ice(K)=0.00019 *11* for 2633; E1,E2,M1 (1967Du05).
2655.9#	3193.94	(1/2,3/2,5/2⁺)	538.6349	3/2⁺	
2657.6#	2765.37	(1/2⁻,3/2)	108.1554	1/2⁻	
2663.8#	(5715.78)	1/2⁺	3051.82	(1/2⁻,3/2)	Ice(K)=0.00030 *15* for 2663; E1,(E2) (1967Du05).
2674.6#	2783.72	(1/2⁻,3/2)	108.1554	1/2⁻	Ice(K)=0.00030 *15* for 2678; E1,E2,(M1) (1967Du05).
2684.3#	3257.61	(1/2⁻,3/2)	573.5847	(3/2)⁻	
2701.4#	(5715.78)	1/2⁺	3014.02	(1/2⁻,3/2,5/2⁺)	Ice(K)=0.00087 *9*, Ice(L)=0.00013 *7* for 2709; E1 (1967Du05).
x2723@ *5*					
2732.2#	(5715.78)	1/2⁺	2982.74	(1/2⁻,3/2)	Ice(K)=0.00060 *18* for 2733; E1 (1967Du05).
2743.5#	2852.64	(1/2,3/2)	108.1554	1/2⁻	
x2751& *4*					Ice(K)=0.00050 *25* for 2753; E1,E2,(M1) (1967Du05).
2765.2#	2874.44	(1/2,3/2)	108.1554	1/2⁻	
2772.3#	(5715.78)	1/2⁺	2943.55	(1/2,3/2)	
x2782& *4*					Ice(K)=0.00025 *15* for 2782; E1,E2,M1 (1967Du05).
2803.5#	2982.74	(1/2⁻,3/2)	180.9230	(5/2)⁻	Ice(K)=0.00027 *14* for 2809; E1,E2,M1 (1967Du05).
2821.6#	2982.74	(1/2⁻,3/2)	158.5888	(3/2)⁻	E_γ: poor-fit; level-energy difference=2824.1.
x2828& *3*					Ice(K)=0.00037 *19* for 2832; E1,E2,M1 (1967Du05).
2832.0#	3014.02	(1/2⁻,3/2,5/2⁺)	180.9230	(5/2)⁻	
2834.7#	2943.55	(1/2,3/2)	108.1554	1/2⁻	
2840.3#	(5715.78)	1/2⁺	2874.44	(1/2,3/2)	Ice(K)=0.00042 *13* for 2847 (1967Du05).
2855.7#	3014.02	(1/2⁻,3/2,5/2⁺)	158.5888	(3/2)⁻	
2862.3#	(5715.78)	1/2⁺	2852.64	(1/2,3/2)	
2871.2#	3051.82	(1/2⁻,3/2)	180.9230	(5/2)⁻	
2874.7#	2982.74	(1/2⁻,3/2)	108.1554	1/2⁻	Ice(K)=0.00032 *16* for 2869; E1,(E2) (1967Du05).
2884.6#	3422.01	(1/2,3/2)	538.6349	3/2⁺	
x2894& *4*					
2902.9#	3473.72	(1/2,3/2)	570.2611	(1/2)⁻	Ice(K)=0.00015 *8* for 2898 (1967Du05).
2905.3#	3443.49	(1/2⁻,3/2,5/2⁺)	538.6349	3/2⁺	
2921.6#	(5715.78)	1/2⁺	2793.15	(1/2,3/2)	
2931.7#	(5715.78)	1/2⁺	2783.72	(1/2⁻,3/2)	Ice(K)=0.00010 *6* for 2937; E1,(E2) (1967Du05).

$^{165}_{66}$Dy$_{99}$-37

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J^π_i	E_f	J^π_f	Comments
2942.5[#]		3051.82	(1/2$^-$,3/2)	108.1554	1/2$^-$	
2950.2[#]		(5715.78)	1/2$^+$	2765.37	(1/2$^-$,3/2)	Ice(K)=0.00046 *14*; E1 (1967Du05).
2969.4[#]		3539.44	(1/2,3/2)	570.2611	(1/2)$^-$	Ice(K)=0.00010 *6* for 2974; E1 (1967Du05).
[x]2983[&] *3*						
2999.5[#]		3539.44	(1/2,3/2)	538.6349	3/2$^+$	
3009.3[#]		(5715.78)	1/2$^+$	2705.65	(1/2,3/2)	
3014.1[#]		3587.41	(1/2$^-$,3/2,5/2$^+$)	573.5847	(3/2)$^-$	
3015.5[#]		3123.44	(1/2,3/2)	108.1554	1/2$^-$	
3034.5[#]		3193.94	(1/2,3/2,5/2$^+$)	158.5888	(3/2)$^-$	Ice(K)=0.00036 *7* for 3039; E1 (1967Du05).
[x]3047[@] *5*						
3071.2[#]		3257.61	(1/2$^-$,3/2)	184.2545	5/2$^-$	E_γ: poor-fit; level-energy difference=3073.3.
3075.9[#]		3651.47	(1/2,3/2,5/2$^+$)	573.5847	(3/2)$^-$	Ice(K)=0.00020 *8* for 3079; E1,(E2) (1967Du05). E_γ: poor-fit; level-energy difference=3077.9.
[x]3084[&] *4*						
3098.3[#]		3257.61	(1/2$^-$,3/2)	158.5888	(3/2)$^-$	
3105.8[#]		(5715.78)	1/2$^+$	2610.04	(1/2,3/2)	
3115.4[#]		3651.47	(1/2,3/2,5/2$^+$)	538.6349	3/2$^+$	Ice(K)=0.00026 *10* for 3115 (1967Du05). E_γ: poor-fit; level-energy difference=3112.8.
[x]3146[&] *4*						
3152.5[#]		3257.61	(1/2$^-$,3/2)	108.1554	1/2$^-$	Ice(K)=0.00020 *10*, Ice(L)=0.000026 *10* for 3154; E1,(E2) (1967Du05). E_γ: poor-fit; level-energy difference=3149.4.
3168.2[#]		(5715.78)	1/2$^+$	2547.53	(1/2,3/2)	Ice(K)=0.00025 *10* for 3170 (1967Du05).
3198.0[#]		3379.40	(1/2$^-$,3/2)	180.9230	(5/2)$^-$	Ice(K)=0.000007 *5* for 3202 (1967Du05).
[x]3216[&] *4*	<0.08					α(K)exp>0.0015 Ice(K)=0.00010 *5*.
3238.9[#]		(5715.78)	1/2$^+$	2475.80	(1/2,3/2)	
3261.7[#]		3443.49	(1/2$^-$,3/2,5/2$^+$)	180.9230	(5/2)$^-$	
3262.7[#]		3422.01	(1/2,3/2)	158.5888	(3/2)$^-$	
3271.3[#]		3379.40	(1/2$^-$,3/2)	108.1554	1/2$^-$	Ice(K)=0.00028 *8*, Ice(L)=0.000043 *22* for 3276; E1,(E2) (1967Du05).
3275.1[#]		3849.24	(1/2,3/2,5/2$^+$)	573.5847	(3/2)$^-$	
3297.8[#]		3455.39	(1/2,3/2)	158.5888	(3/2)$^-$	
3313.0[#]		3422.01	(1/2,3/2)	108.1554	1/2$^-$	
3314.6[#]		3473.72	(1/2,3/2)	158.5888	(3/2)$^-$	
[x]3323[&] *4*	0.25 *11*					

$^{165}_{66}$Dy$_{99}$-38

γ(^{165}Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	α[d]	Comments
3346.0[#]		3455.39	(1/2,3/2)	108.1554	1/2⁻			Ice(K)=0.00012 *6* for 3349 (1967Du05).
[x]3374[@] *4*	<0.12							
3406.0[#]		3979.08	(1/2,3/2,5/2⁺)	573.5847	(3/2)⁻			
3406.1[#]		3587.41	(1/2⁻,3/2,5/2⁺)	180.9230	(5/2)⁻			
[x]3417[&] *3*	0.95 *32*							
3444.2[#]		(5715.78)	1/2⁺	2271.21	(1/2⁻,3/2)			
[x]3478[&] *3*	0.35 *17*							α(K)exp=0.00042 *21* Mult.: E1,(M1,E2) (1967Du05). Ice(K)=0.00012 *4*.
3492.2[#]		3651.47	(1/2,3/2,5/2⁺)	158.5888	(3/2)⁻			Ice(K)=0.000077 *38* for 3495 (1967Du05).
[x]3511[&] *4*	<0.25							
3524.84 *23*	0.143 *21*	(5715.78)	1/2⁺	2190.90				Ice(K)=0.00017 *5* for 3533 multiplet: 3525+3529+3537. α(K)exp=0.00022 *7* for multiplet: 3525+3529+3537 consistent with E1,M1,E2.
3528.64 *23*	0.46 *7*	(5715.78)	1/2⁺	2187.10				
3537.18 *23*	0.35 *5*	(5715.78)	1/2⁺	2178.55				
3555.34 *23*	0.33 *5*	(5715.78)	1/2⁺	2160.39	(1/2⁺,3/2⁺,5/2⁺)	(M1,E2)	0.00135 *9*	α(K)exp=0.00023 *7* α(K)=0.000248 *4*; α(L)=3.28×10^{-5} *7*; α(M)=7.12×10^{-6} *17* α(N)=1.65×10^{-6} *4*; α(O)=2.43×10^{-7} *6*; α(P)=1.45×10^{-8} *4*; α(IPF)=0.00106 *9* Mult.: E1 proposed by 1967Du05 is in disagreement with deduced α(K)exp. Ice(K)=0.000063 *19*.
[x]3572[@] *4*	0.12 *7*							
[x]3588[@] *5*	0.12 *7*							
3603.08 *23*	0.061 *9*	(5715.78)	1/2⁺	2112.65				
3608.65 *23*	0.37 *6*	(5715.78)	1/2⁺	2107.08	(1/2⁺,3/2⁺,5/2⁺)	(M1,E2)	0.00136 *9*	α(K)exp=0.00032 *7* α(N)=1.598×10^{-6} *35*; α(O)=2.36×10^{-7} *5*; α(P)=1.405×10^{-8} *33*; α(IPF)=0.00108 *9* α(K)=0.000241 *4*; α(L)=3.19×10^{-5} *7*; α(M)=6.91×10^{-6} *15* Ice(K)=0.000096 *14*.
3627.64 *23*	0.26 *4*	(5715.78)	1/2⁺	2088.09				
3649.92 *23*	0.090 *14*	(5715.78)	1/2⁺	2065.81				
3652.25 *23*	0.021 *3*	(5715.78)	1/2⁺	2063.48				
[x]3664[@] *4*	0.10 *5*							

$^{165}_{66}$Dy$_{99}$-39

γ(^{165}Dy) (continued)

E_γ [†]	I_γ [‡e]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [b]	α [d]	Comments
3673.90 *23*	0.031 *5*	(5715.78)	1/2$^+$	2041.83				
3691.2[#]		3849.24	(1/2,3/2,5/2$^+$)	158.5888	(3/2)$^-$			
3708.19 *22*	0.37 *6*	(5715.78)	1/2$^+$	2007.54	(1/2$^+$,3/2$^+$,5/2$^+$)	(M1,E2)	0.00139 *9*	α(K)exp=0.00021 *7* α(K)=0.0002291 *32*; α(L)=3.02×10^{-5} *5*; α(M)=6.55×10^{-6} *12* α(N)=1.516×10^{-6} *27*; α(O)=2.24×10^{-7} *4*; α(P)=1.333×10^{-8} *26*; α(IPF)=0.00112 *9* Ice(K)=0.000063 *16*.
3727.52 *23*	0.031 *5*	(5715.78)	1/2$^+$	1988.21				
3746.74 *23*	0.32 *5*	(5715.78)	1/2$^+$	1968.99	(1/2$^+$,3/2$^+$,5/2$^+$)	(M1,E2)	0.00140 *9*	α(K)=0.0002246 *31*; α(L)=2.96×10^{-5} *5*; α(M)=6.42×10^{-6} *11* α(N)=1.486×10^{-6} *25*; α(O)=2.19×10^{-7} *4*; α(P)=1.307×10^{-8} *24*; α(IPF)=0.00114 *9* α(K)exp=0.00025 *5* for 3747+3753 suggests (M1,E2) for doublet. Ice(K)=0.000110 *17* for 3747+3753.
3752.91 *23*	0.22 *3*	(5715.78)	1/2$^+$	1962.82	(1/2$^+$,3/2$^+$,5/2$^+$)	(M1,E2)	0.00140 *10*	α(K)=0.0002239 *31*; α(L)=2.95×10^{-5} *5*; α(M)=6.40×10^{-6} *10* α(N)=1.481×10^{-6} *25*; α(O)=2.18×10^{-7} *4*; α(P)=1.303×10^{-8} *23*; α(IPF)=0.00114 *9* Mult.: see comment for 3746.74γ.
3771.91 *22*	0.34 *5*	(5715.78)	1/2$^+$	1943.82				
3800.27 *23*	0.027 *4*	(5715.78)	1/2$^+$	1915.46				
3819.85 *22*	0.31 *5*	(5715.78)	1/2$^+$	1895.88	(1/2$^+$,3/2$^+$,5/2$^+$)	(M1,E2)	0.00142 *10*	α(K)exp=0.00035 *8* α(K)=0.0002165 *31*; α(L)=2.85×10^{-5} *4*; α(M)=6.19×10^{-6} *9* α(N)=1.431×10^{-6} *22*; α(O)=2.111×10^{-7} *32*; α(P)=1.259×10^{-8} *20*; α(IPF)=0.00117 *10* Ice(K)=0.000090 *14*.
3820.0[#]		3979.08	(1/2,3/2,5/2$^+$)	158.5888	(3/2)$^-$			
3825.09 *23*	0.047 *7*	(5715.78)	1/2$^+$	1890.64				
3830.02 *23*	0.042 *6*	(5715.78)	1/2$^+$	1885.71				
3839.93 *22*	0.41 *6*	(5715.78)	1/2$^+$	1875.80	(1/2$^+$,3/2$^+$,5/2$^+$)	(M1,E2)	0.00143 *10*	α(K)exp=0.00033 *7* α(K)=0.0002144 *32*; α(L)=2.82×10^{-5} *4*; α(M)=6.13×10^{-6} *9* α(N)=1.417×10^{-6} *21*; α(O)=2.090×10^{-7} *31*; α(P)=1.246×10^{-8} *19*; α(IPF)=0.00118 *10* Ice(K)=0.000110 *17* for 3839.9+3843.06.
3843.06 *22*	0.105 *15*	(5715.78)	1/2$^+$	1872.67				

$^{165}_{66}$Dy$_{99}$-40

γ(^{165}Dy) (continued)

Eγ[†]	Iγ[‡e]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[b]	α[d]	Comments
3881.18 *22*	0.073 *11*	(5715.78)	1/2+	1834.55				
3885.28 *21*	0.51 *8*	(5715.78)	1/2+	1830.45	(1/2+,3/2+,5/2+)	(M1,E2)	0.00144 *10*	α(K)exp=0.00038 *9* α(K)=0.0002097 *33*; α(L)=2.76×10^{-5} *4*; α(M)=5.99×10^{-6} *8* α(N)=1.385×10^{-6} *20*; α(O)=2.043×10^{-7} *29*; α(P)=1.219×10^{-8} *18*; α(IPF)=0.00119 *10* Ice(K)=0.000160 *24*.
3901.25 *22*	0.109 *16*	(5715.78)	1/2+	1814.48	(3/2)			
3919.88 *21*	0.071 *11*	(5715.78)	1/2+	1795.85				α(K)exp=0.00069 *23* Mult.: M1,E2,(E1) (1967Du05), but deduced α(K)exp is too high to be consistent with any multipolarity. Ice(K)=0.000040 12.
3944.96 *21*	0.26 *4*	(5715.78)	1/2+	1770.76				
3960.84 *22*	0.44 *7*	(5715.78)	1/2+	1754.88				α(K)exp=0.00017 *4* Mult.: E1 (1967Du05), but deduced α(K)exp consistent with E1,M1,E2. Ice(K)=0.000061 *12*.
3985.29 *24*	0.020 *3*	(5715.78)	1/2+	1730.43				
4021.83 *24*	0.033 *5*	(5715.78)	1/2+	1693.89				α(K)exp=0.0018 *5* Mult.: M1,E2 (1967Du05). But deduced α(K)exp is too high to be consistent with any multipolarity. Ice(K)=0.000050 *10*.
[x]4031[@] *5*	0.14 *7*							
4044.58 *21*	0.050 *8*	(5715.78)	1/2+	1671.14				
4067.4 *4*	0.30 *5*	(5715.78)	1/2+	1648.3				α(K)exp=0.00016 *6* Mult.: E1 (1967Du05), but deduced α(K)exp consistent with E1,M1,E2. Ice(K)=0.000040 *12*.
4081.12 *22*	0.085 *13*	(5715.78)	1/2+	1634.60				
4083.81 *21*	0.36 *5*	(5715.78)	1/2+	1631.91				
4092.47 *21*	0.080 *12*	(5715.78)	1/2+	1623.25				α(K)exp=0.00094 *19* Mult.: M1,E2,(E1) (1967Du05). But deduced α(K)exp is too high to be consistent with any multipolarity. Ice(K)=0.000062 *12*.
4123.86 *21*	1.48 *22*	(5715.78)	1/2+	1591.86	(1/2−,3/2−)	(E1)	1.81×10^{-3} *3*	α(K)exp=0.00013 *3* α(K)=0.0001095 *15*; α(L)=1.397×10^{-5} *20*; α(M)=3.02×10^{-6} *4* α(N)=6.97×10^{-7} *10*; α(O)=1.027×10^{-7} *14*; α(P)=6.14×10^{-9} *9*; α(IPF)=0.001684 *24* Ice(K)=0.000160 *16*.
4128.1 *3*	0.022 *3*	(5715.78)	1/2+	1587.62				
4155.62 *21*	0.26 *4*	(5715.78)	1/2+	1560.10				α(K)exp=0.00016 *7*

γ(^{165}Dy) (continued)

E_γ [†]	I_γ [‡e]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [b]	α [d]	Comments
								Mult.: E1,M1,E2 (1967Du05). Ice(K)=0.000034 *14*.
4160.56 *22*	0.033 *5*	(5715.78)	$1/2^+$	1555.16				
4214.46 *23*	0.021 *3*	(5715.78)	$1/2^+$	1501.26				
4250.89 *21*	0.124 *19*	(5715.78)	$1/2^+$	1464.8481	$(3/2)^-$	(E1)	1.86×10^{-3} *3*	α(K)exp=0.00015 *9* α(N)=6.67×10^{-7} *9*; α(O)=9.84×10^{-8} *14*; α(P)=5.88×10^{-9} *8*; α(IPF)=0.001734 *24* α(K)=0.0001049 *15*; α(L)=1.338×10^{-5} *19*; α(M)=2.89×10^{-6} *4* Ice(K)=0.000015 *9*.
4259.62 [g] *11*	0.017 *1*	(5715.78)	$1/2^+$	1456.398	(3/2)			α(K)exp=0.0018 *7* E_γ,I_γ: from 1983Is04; γ not reported by 1990Ka21. Mult.: E1,M1,E2 (1967Du05). Ice(K)=0.000025 *10*.
4270.95 *22*	0.027 *3*	(5715.78)	$1/2^+$	1444.721	$(3/2^-,5/2^+)$			
4275.31 *21*	0.116 *17*	(5715.78)	$1/2^+$	1440.470	$(5/2^+)$	(E2)	1.44×10^{-3} *2*	α(K)exp=0.00026 *11* α(K)=0.0001795 *25*; α(L)=2.338×10^{-5} *33*; α(M)=5.06×10^{-6} *7* α(N)=1.171×10^{-6} *16*; α(O)=1.727×10^{-7} *24*; α(P)=1.031×10^{-8} *14*; α(IPF)=0.001233 *17* Ice(K)=0.000025 *10*.
4315.47 *21*	0.150 *22*	(5715.78)	$1/2^+$	1400.2735	$(3/2^+)$	(M1,E2)	0.00155 *10*	α(K)exp=0.00032 *10* α(K)=0.000172 *5*; α(L)=2.26×10^{-5} *5*; α(M)=4.90×10^{-6} *11* α(N)=1.133×10^{-6} *25*; α(O)=1.67×10^{-7} *4*; α(P)=9.99×10^{-9} *21*; α(IPF)=0.00135 *11* Ice(K)=0.000039 *10*.
4334.85 *22*	0.047 *7*	(5715.78)	$1/2^+$	1380.885	$(5/2^+)$			
4339.51 *21*	0.119 *18*	(5715.78)	$1/2^+$	1376.3374	$(3/2^+)$	(M1,E2)	0.00156 *10*	α(K)exp=0.00047 *16* α(K)=0.000170 *5*; α(L)=2.24×10^{-5} *5*; α(M)=4.85×10^{-6} *11* α(N)=1.121×10^{-6} *25*; α(O)=1.65×10^{-7} *4*; α(P)=9.88×10^{-9} *21*; α(IPF)=0.00136 *11* Ice(K)=0.000046 *14*.
4459.32 *22*	0.21 *3*	(5715.78)	$1/2^+$	1256.502	(3/2)			
4497.52 *21*	0.088 *13*	(5715.78)	$1/2^+$	1218.3547	$(5/2^+)$			
4548.96 *21*	0.141 *21*	(5715.78)	$1/2^+$	1166.8920	$(3/2)^-$			
4557.63 *21*	0.035 *5*	(5715.78)	$1/2^+$	1158.1185	$(5/2^+)$			
4607.65 *21*	0.23 *3*	(5715.78)	$1/2^+$	1108.2008	$(3/2)^+$			
4612.73 *21*	0.79 *12*	(5715.78)	$1/2^+$	1103.0447	$(3/2)^-$	(E1)	1.98×10^{-3} *3*	α(K)exp=0.000119 *25* α(K)=9.36×10^{-5} *13*; α(L)=1.192×10^{-5} *17*; α(M)=2.57×10^{-6} *4*

$^{165}_{66}$Dy$_{99}$-42

$\gamma(^{165}$Dy) (continued)

E_γ[†]	I_γ[‡e]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[b]	α[d]	Comments
								α(N)=5.95×10^{-7} *8*; α(O)=8.77×10^{-8} *12*; α(P)=5.25×10^{-9} *7*; α(IPF)=0.001869 *26* Ice(K)=0.000077 *12*.
4635.82 *21*	0.163 *25*	(5715.78)	1/2$^+$	1080.0395	(1/2,3/2)$^-$			
4699.79 *21*	0.043 *6*	(5715.78)	1/2$^+$	1016.0752	(5/2$^+$)			
4803.86 *21*	0.027 *4*	(5715.78)	1/2$^+$	911.9730	5/2$^+$			
5110.70 *21*	0.91 *14*	(5715.78)	1/2$^+$	605.0960	(3/2)$^-$	E1	2.12×10^{-3} *3*	α(K)exp=0.000088 *17* α(K)=8.13×10^{-5} *11*; α(L)=1.034×10^{-5} *14*; α(M)=2.232×10^{-6} *31* α(N)=5.16×10^{-7} *7*; α(O)=7.61×10^{-8} *11*; α(P)=4.56×10^{-9} *6*; α(IPF)=0.002027 *28* Ice(K)=0.000066 *8*.
5131.9[g] *2*	0.00180 *8*	(5715.78)	1/2$^+$	583.9965	5/2$^+$	(E2)	1.66×10^{-3} *2*	α(K)=0.0001322 *19*; α(L)=1.714×10^{-5} *24*; α(M)=3.71×10^{-6} *5* α(N)=8.58×10^{-7} *12*; α(O)=1.266×10^{-7} *18*; α(P)=7.58×10^{-9} *11*; α(IPF)=0.001503 *21* E_γ,I_γ: from 1984Pr03 only. Mult.: Partial Γ(γ)=1.0 eV *4* (1984Pr03).
5142.22 *21*	1.10 *17*	(5715.78)	1/2$^+$	573.5847	(3/2)$^-$	(E1)	2.13×10^{-3} *3*	α(K)=8.06×10^{-5} *11*; α(L)=1.026×10^{-5} *14*; α(M)=2.213×10^{-6} *31* α(N)=5.11×10^{-7} *7*; α(O)=7.54×10^{-8} *11*; α(P)=4.52×10^{-9} *6*; α(IPF)=0.002036 *29* α(K)exp=0.000086 *9* for 5142.22+5145.57. Ice(K)=0.000165 *10* for doublet 5142.2+5145.6.
5145.57 *21*	1.23 *18*	(5715.78)	1/2$^+$	570.2611	(1/2)$^-$	(E1)	2.13×10^{-3} *3*	α(K)=8.06×10^{-5} *11*; α(L)=1.025×10^{-5} *14*; α(M)=2.211×10^{-6} *31* α(N)=5.11×10^{-7} *7*; α(O)=7.54×10^{-8} *11*; α(P)=4.51×10^{-9} *6*; α(IPF)=0.002037 *29* Mult.: see comment for 5142.22γ.
5177.15 *21*	0.89 *13*	(5715.78)	1/2$^+$	538.6349	3/2$^+$	M1,E2	0.00178 *11*	α(K)exp=0.00014 *2*; α(L)exp=0.000024 *10* α(K)=0.000123 *7*; α(L)=1.61×10^{-5} *8*; α(M)=3.49×10^{-6} *17* α(N)=8.1×10^{-7} *4*; α(O)=1.19×10^{-7} *6*; α(P)=7.13×10^{-9} *35*; α(IPF)=0.00164 *12* Ice(K)=0.000100 *12*, Ice(L)=0.000018 *5*.
5557.11 *21*	4.2 *6*	(5715.78)	1/2$^+$	158.5888	(3/2)$^-$	E1	2.24×10^{-3} *3*	α(K)exp=0.000076 *15* α(K)=7.26×10^{-5} *10*; α(L)=9.22×10^{-6} *13*; α(M)=1.991×10^{-6} *28* α(N)=4.60×10^{-7} *6*; α(O)=6.78×10^{-8} *9*; α(P)=4.07×10^{-9} *6*; α(IPF)=0.002160 *30* I_γ: other: 4.0 *8* (1966Ha34). Ice(K)=0.000260 *16*.
5607.51 *21*	5.1 *8*	(5715.78)	1/2$^+$	108.1554	1/2$^-$	(E1)	2.26×10^{-3} *3*	α(K)exp=0.000089 *18*; α(L)exp=0.000017 *4* α(K)=7.17×10^{-5} *10*; α(L)=9.11×10^{-6} *13*; α(M)=1.966×10^{-6} *28* α(N)=4.54×10^{-7} *6*; α(O)=6.70×10^{-8} *9*; α(P)=4.02×10^{-9} *6*;

$^{165}_{66}$Dy$_{99}$-43

γ(^{165}Dy) (continued)

E_γ [†]	E_i(level)	Comments
		α(IPF)=0.002175 *30* Additional information 4. Ice(K)=0.000370 *22*, Ice(L)=0.000073 *9*.

[†] From 1990Ka21, unless otherwise stated. 1967Du05 reported a large number of transitions from the conversion electron data, most of which have been identified with the gammas in the present data set. Those which could not be identified are: 1770, 1822, 2070, 2267, 2483, 2691, 3058, 3501, and 4282.

[‡] From 1990Ka21, unless otherwise stated. Values are also available from 1983Is04, 1967Ma25 and 1965Sc09; but are incomplete and less precise. Primary γ rays from 4068 to 5608 are listed by 1983Is04 with slightly better precision, but seem to be systematically lower by ≈15% in the low-energy section to 35% in the high-energy section.

[#] From 1984Po21 from 2-quantum cascade study, ΔE=1-3 keV. Averages taken (evaluators) when more than one cascade is reported. For relative intensities of γγ coin cascades, see 1984Po21.

[@] Observed in γ spectra only by 1967Ma25, not in ce spectra.

[&] Observed in γ spectra (1967Ma25) and ce spectra (1967Du05).

[a] Isotopic assignment is uncertain.

[b] From conversion coefficients deduced by the evaluators from relative I(ce) of 1967Du05 and relative Iγ of 1990Ka21, normalized to α(K)=0.0102 *2* from BrIcc for 538.634γ as pure E2. Deduced conversion coefficients are given under comments, obtained as I(ce)/Iγ multiplying a normalization factor of α(K)/[I(ceK)/Iγ]=1.22 *16* from data of 538.634γ. Mixing ratios are deduced from conversion coefficients using the BrIccMixing program.

[c] Placement adopted from table 6 of 1990Ka21. The 277.74γ and 277.843γ were listed from 1380.9 and 1444.7 levels, respectively, in authors′ table 2.

[d] Additional information 5.

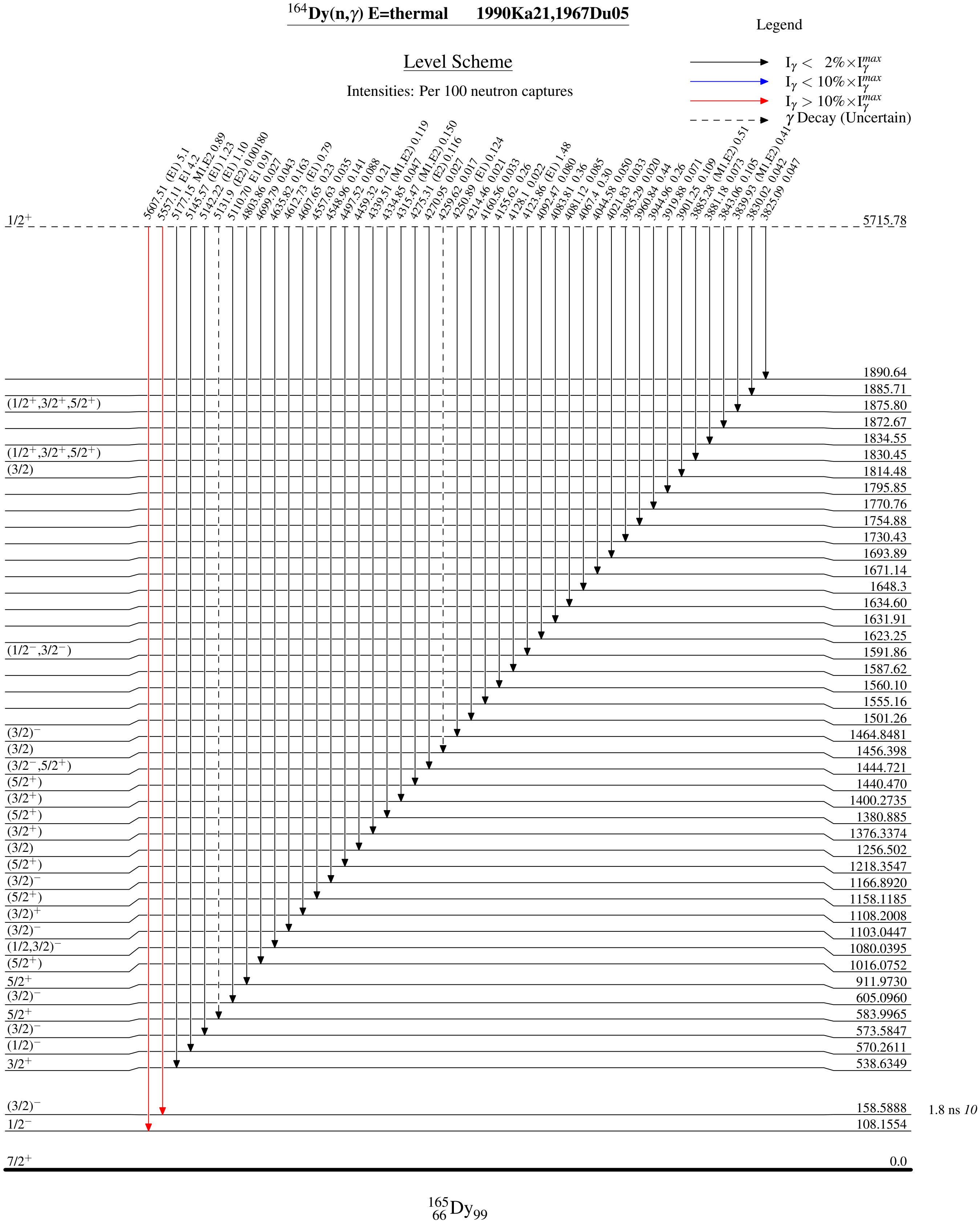
[e] Intensity per 100 neutron captures.

[f] Multiply placed with undivided intensity.

[g] Placement of transition in the level scheme is uncertain.

[x] γ ray not placed in level scheme.

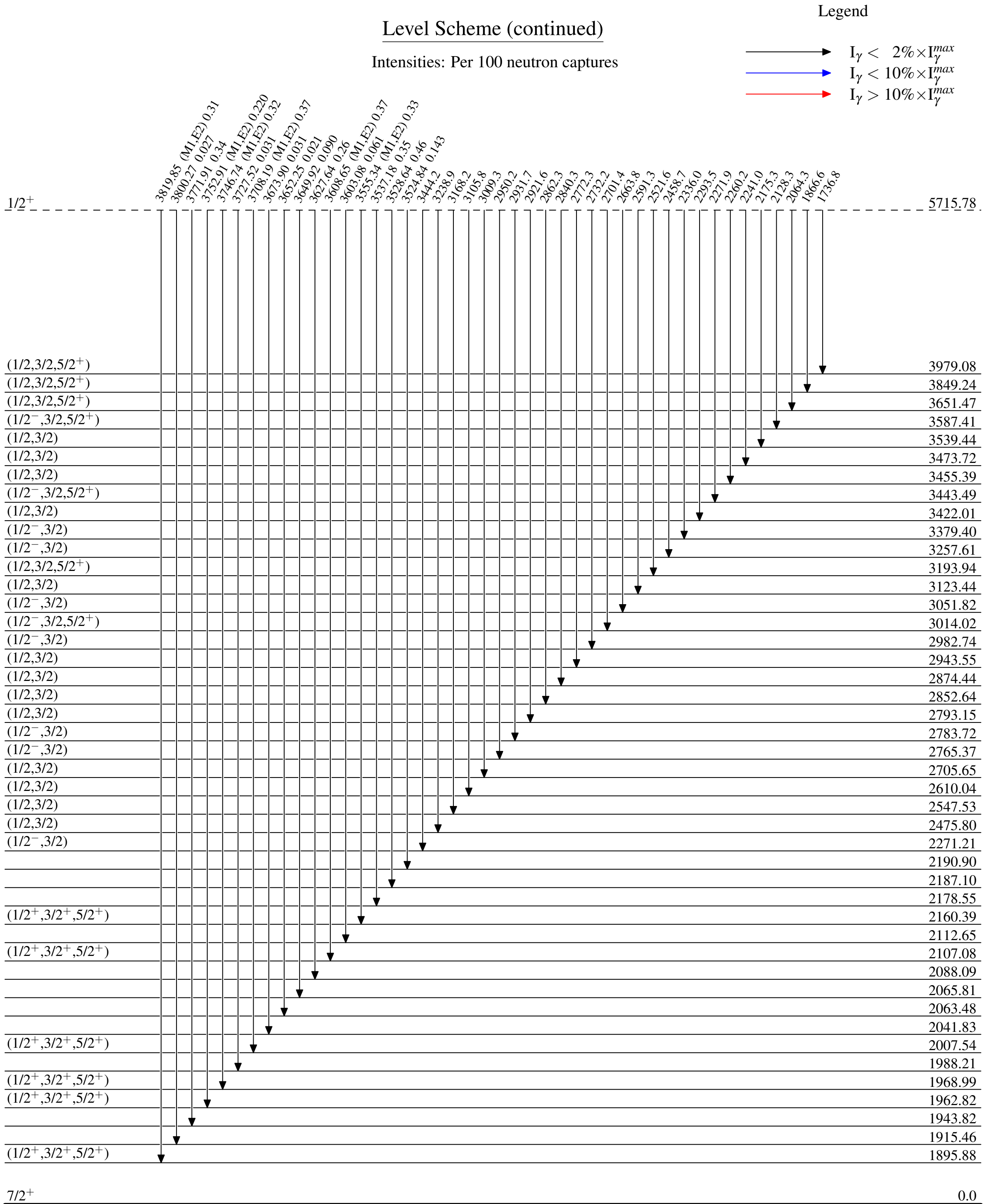
^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05



^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05

Level Scheme (continued)

Intensities: Per 100 neutron captures

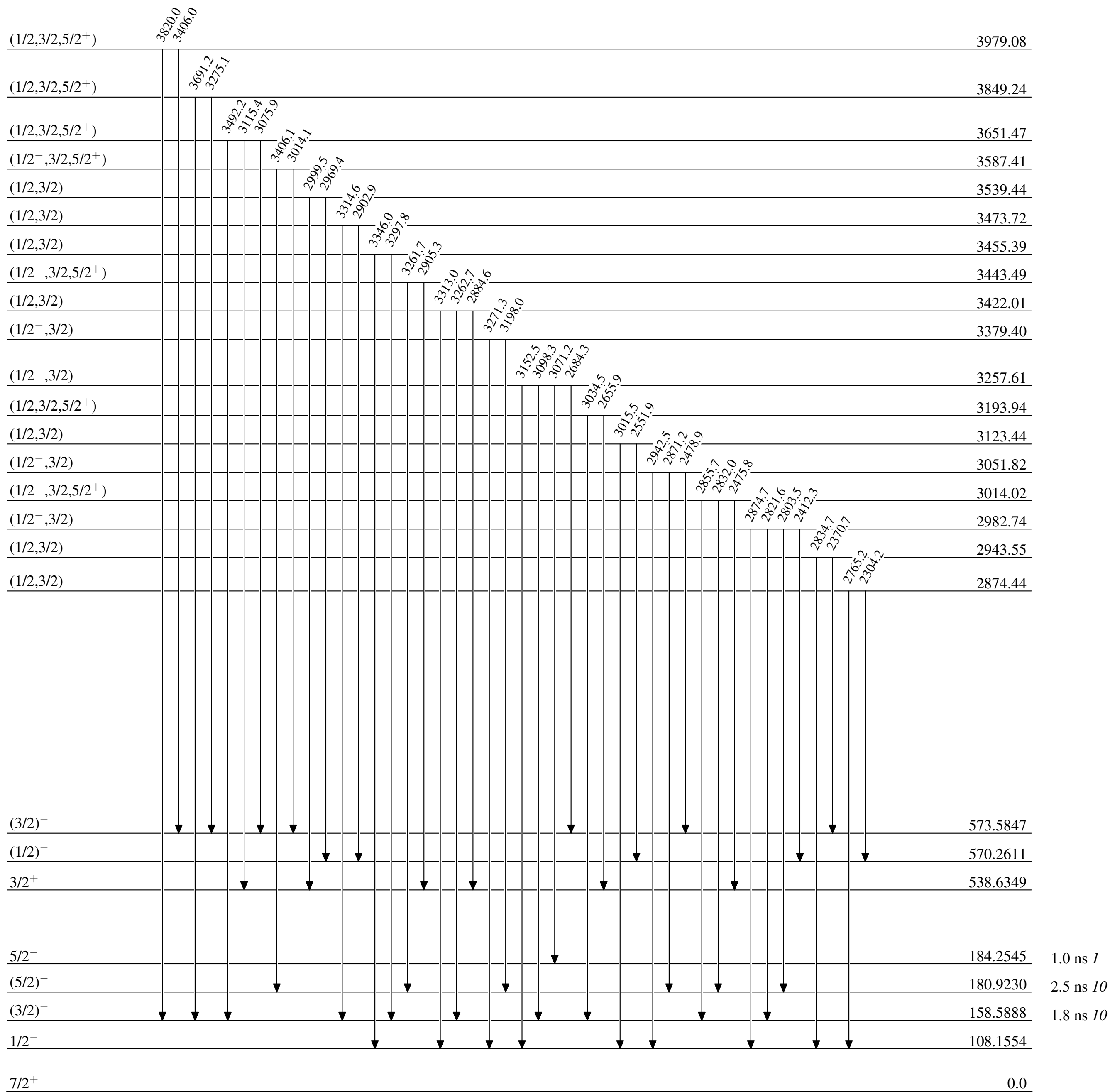


$^{165}_{66}Dy_{99}$

^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05

Level Scheme (continued)

Intensities: Per 100 neutron captures

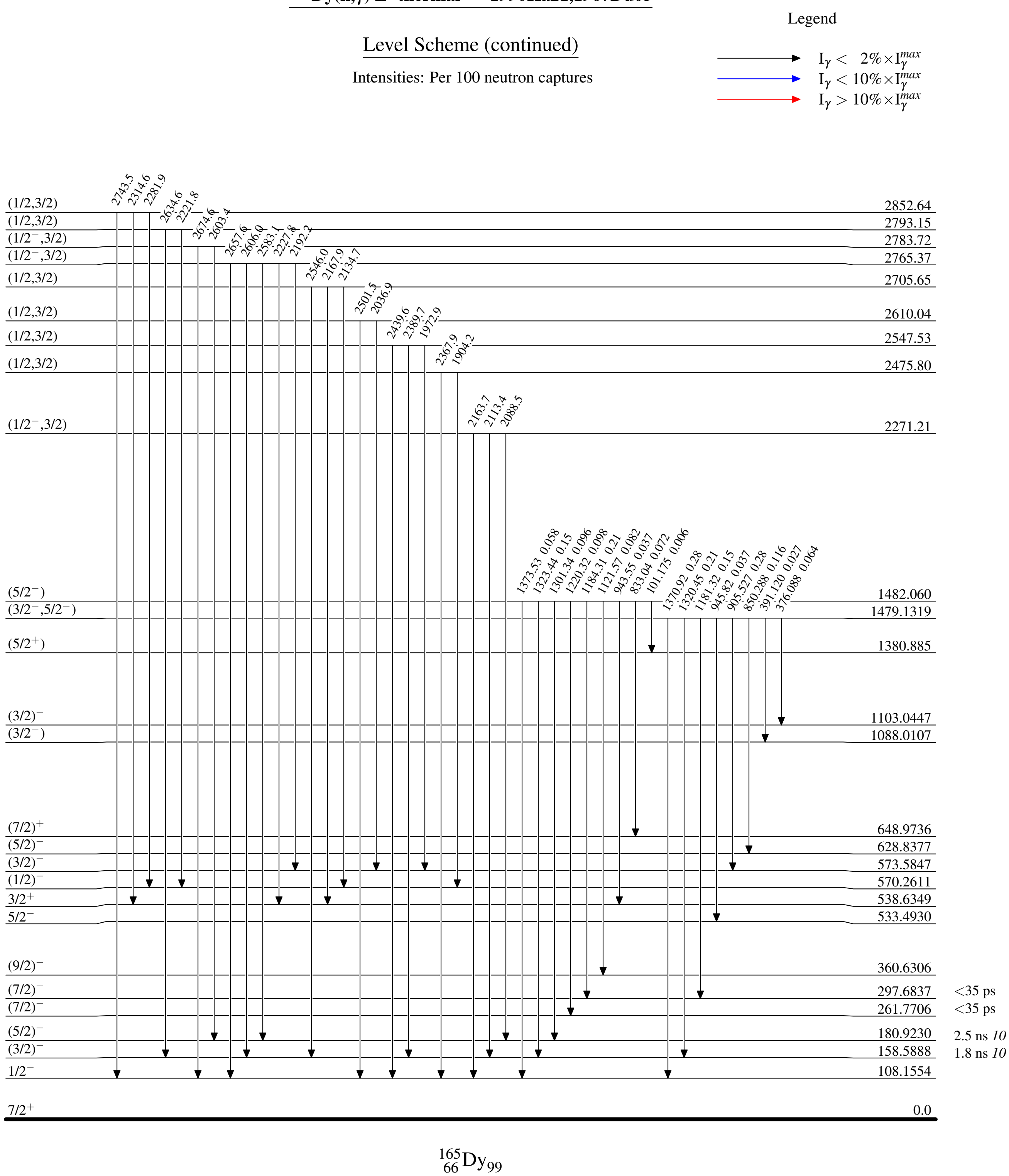


$^{165}_{66}Dy_{99}$

^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05

Level Scheme (continued)

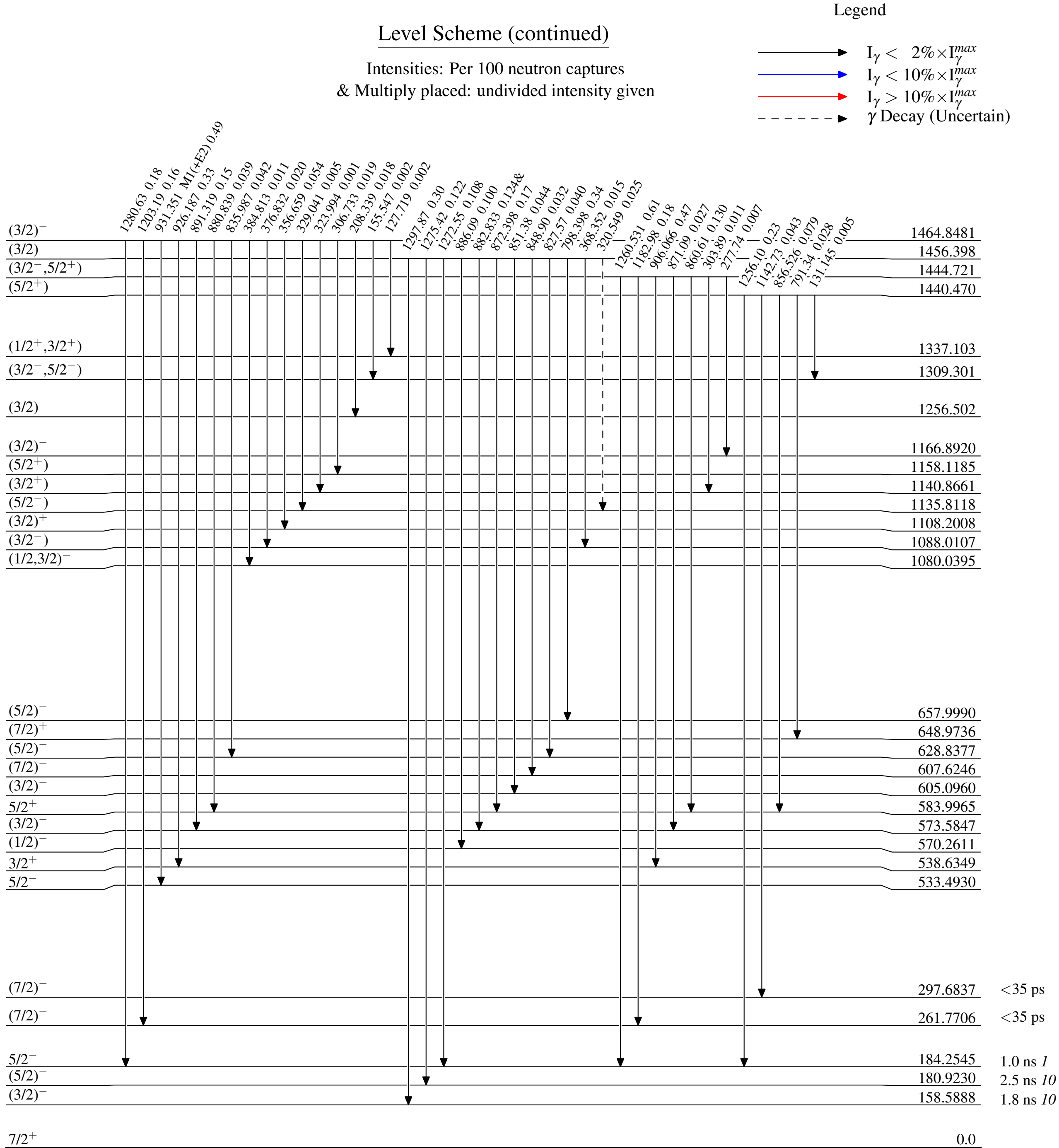
Intensities: Per 100 neutron captures



^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05

Level Scheme (continued)

Intensities: Per 100 neutron captures
& Multiply placed: undivided intensity given



$^{165}_{66}Dy_{99}$

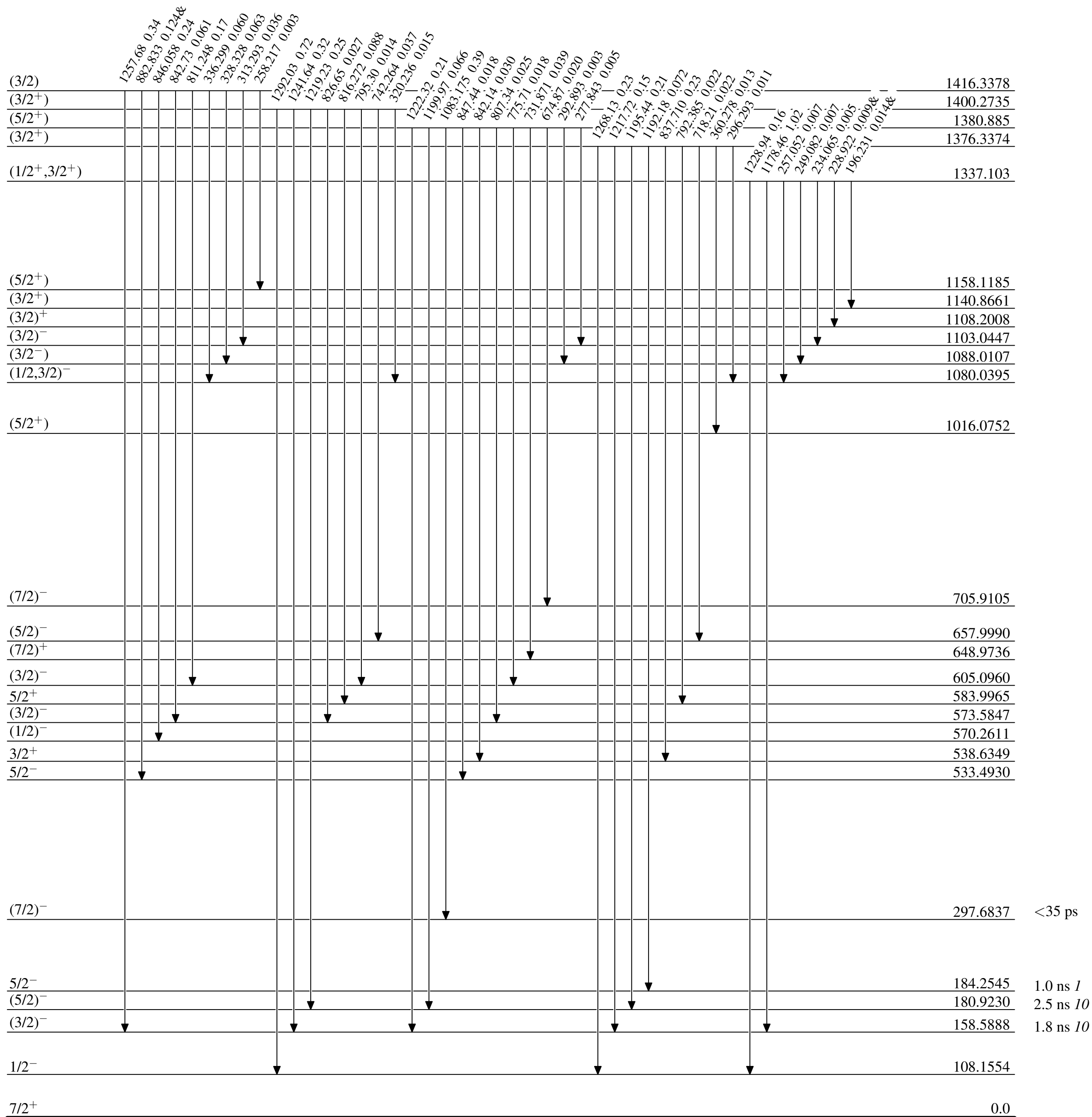
$^{164}Dy(n,\gamma)$ E=thermal 1990Ka21,1967Du05

Level Scheme (continued)

Intensities: Per 100 neutron captures
& Multiply placed: undivided intensity given

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$

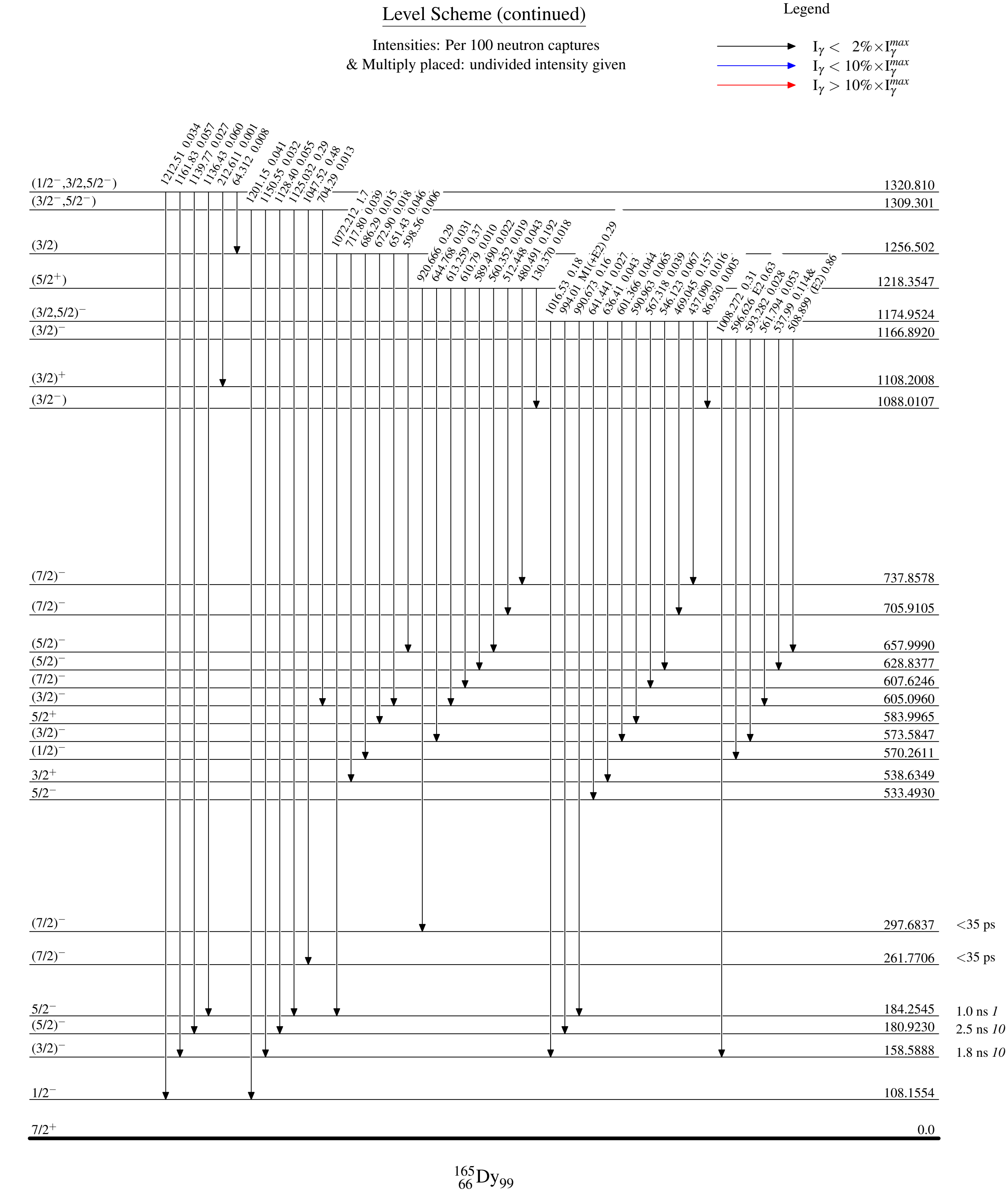


$^{165}_{66}Dy_{99}$

^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05

Level Scheme (continued)

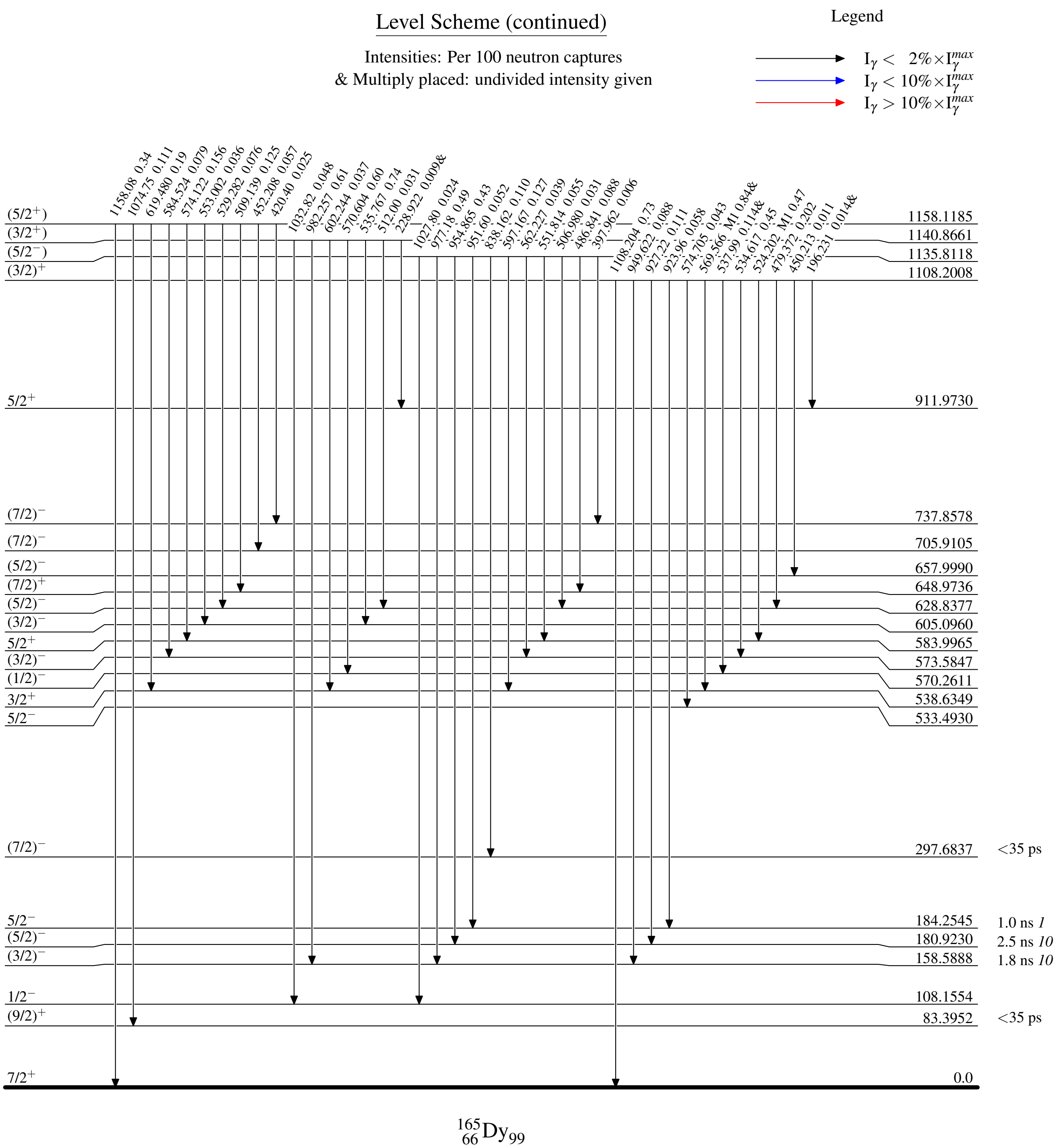
Intensities: Per 100 neutron captures
& Multiply placed: undivided intensity given



^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05

Level Scheme (continued)

Intensities: Per 100 neutron captures
& Multiply placed: undivided intensity given

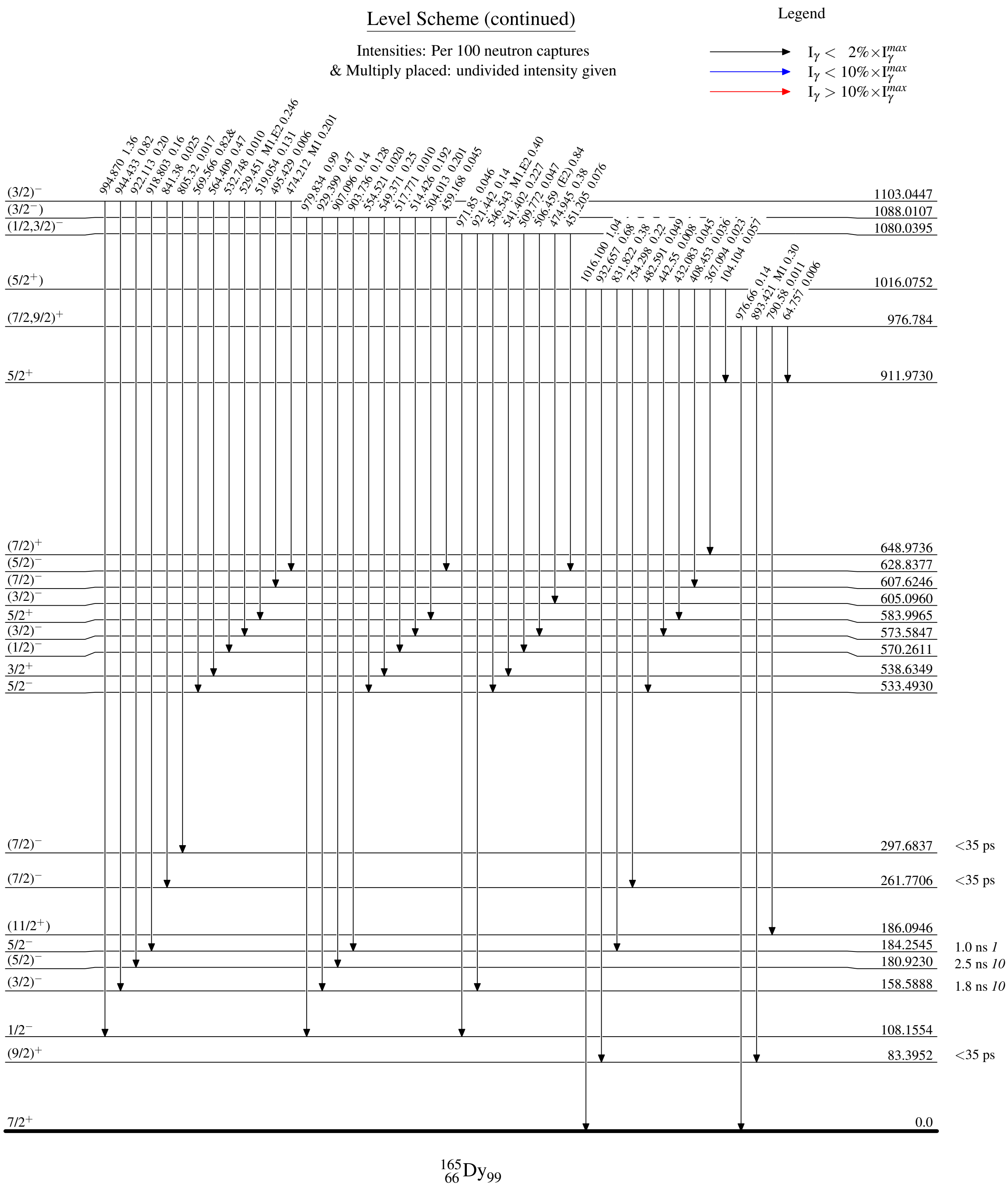


^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05

Level Scheme (continued)

Intensities: Per 100 neutron captures

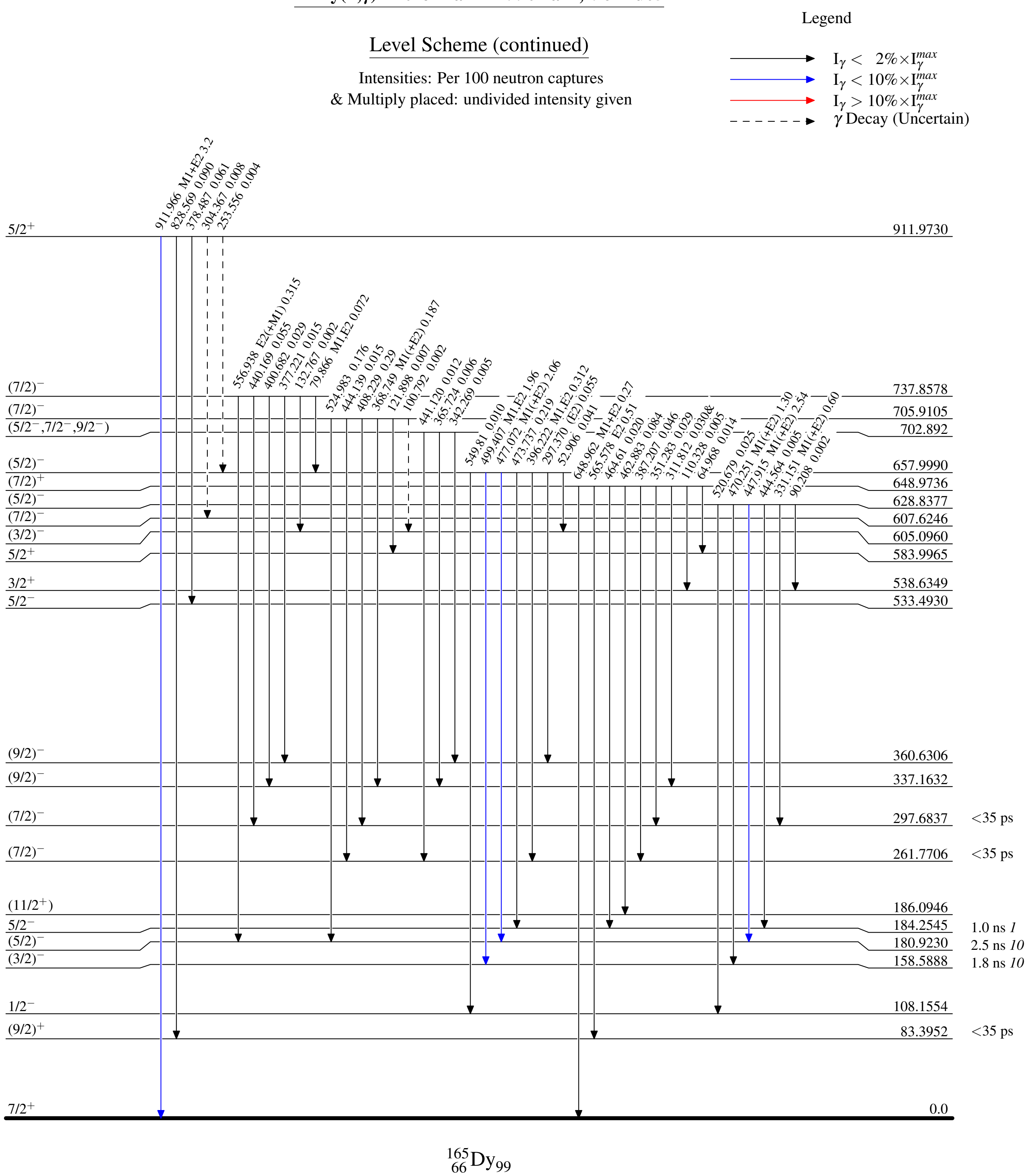
& Multiply placed: undivided intensity given



^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05

Level Scheme (continued)

Intensities: Per 100 neutron captures
& Multiply placed: undivided intensity given



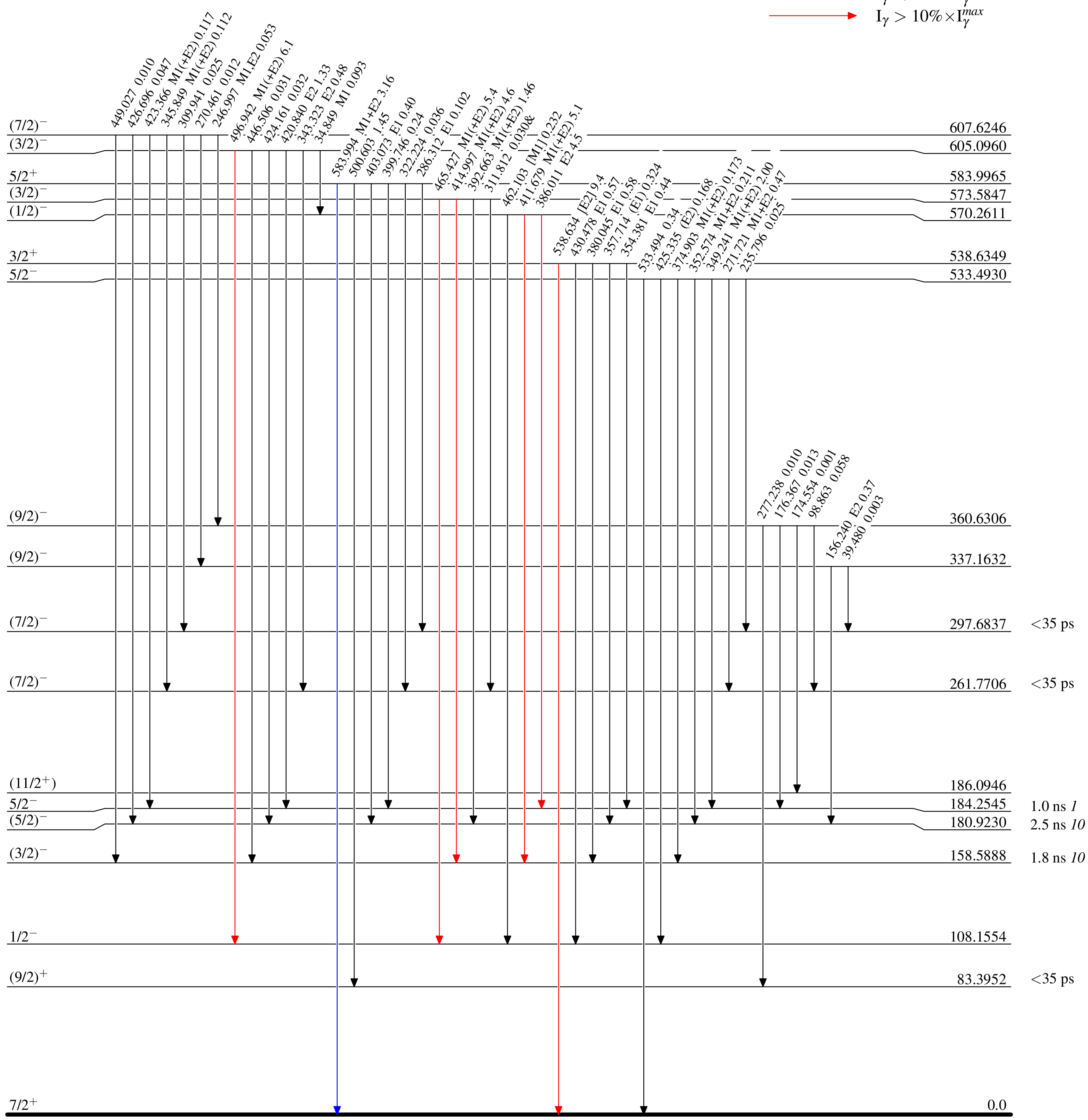
^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05

Level Scheme (continued)

Intensities: Per 100 neutron captures
& Multiply placed: undivided intensity given

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



$^{165}_{66}Dy_{99}$

^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05

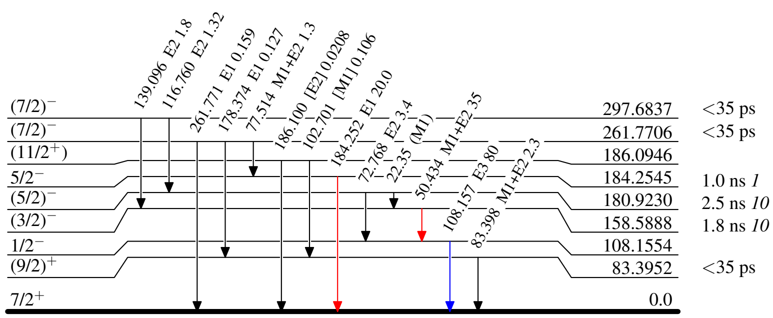
Level Scheme (continued)

Intensities: Per 100 neutron captures

& Multiply placed: undivided intensity given

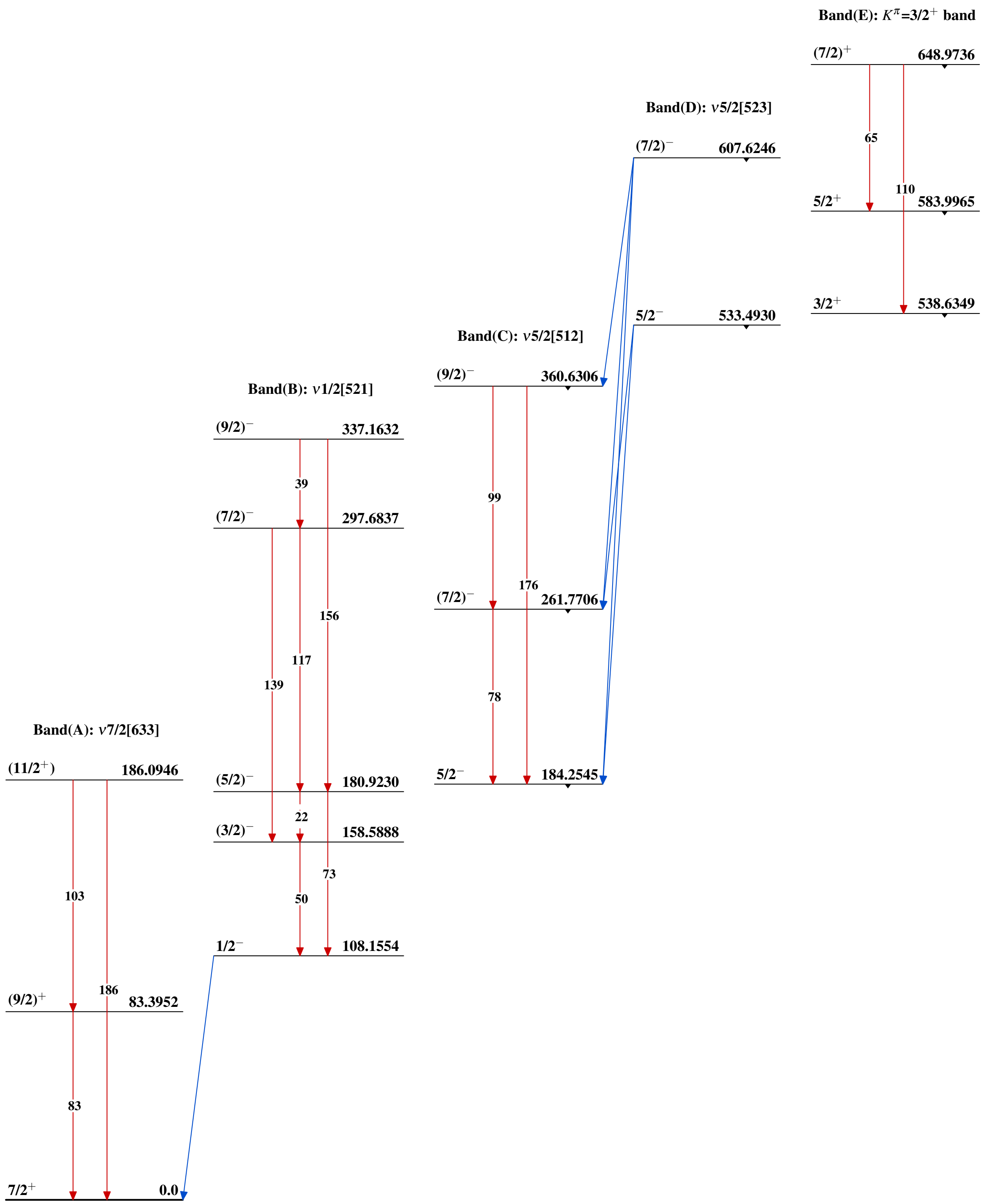
Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)



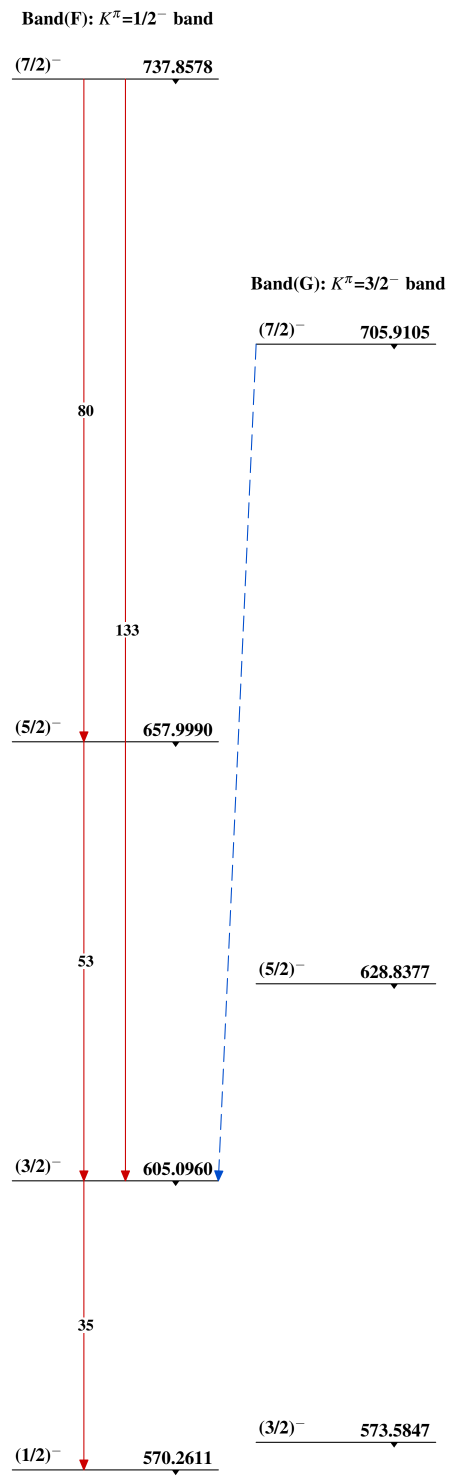
$^{165}_{66}Dy_{99}$

^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05



$^{165}_{66}Dy_{99}$

^{164}Dy(n,γ) E=thermal 1990Ka21,1967Du05 (continued)



$^{165}_{66}Dy_{99}$