^{158}Gd(n,γ) E=2.0 keV 2003Gr27

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. W. Reich	NDS 113, 157 (2012)	31-Dec-2010

Additional information 1.

Resonance-averaged n-capture, E(n) centered around 2.0 keV. 80-g Gd_2O_3 target, 95.8% enrichment. Measured primary γ's between 1.5 and 8 MeV using a pair spectrometer consisting of two NaI(Tl) detectors and a Ge(Li) detector, FWHM≈6 keV at 6 MeV. Report Eγ, Iγ for≈150 primary γ's between≈3 and 6 MeV. Discuss photon strength functions in light of various models.

Other: 1977GrZL.

This data set draws from the XUNDL data file on this reaction, compiled (July 7, 2004) by J. Roediger and B. Singh (McMaster University).

^{159}Gd Levels

E(level)†	J$^\pi$‡	Comments
0.0	$1/2^-$,$3/2^-$	
67.65 *6*	$5/2^+$	
507.75 *5*	$1/2^-$,$3/2^-$	
558.36 *3*	$1/2^-$,$3/2^-$	
601.87 *7*	$1/2^+$,$3/2^+$	
646.93 *10*	$5/2^+$	
744.48 *7*	$1/2^+$,$3/2^+$	
782.08 *8*	$1/2^+$,$3/2^+$	
800.59 *11*	$5/2^+$	
818.59 *15*	$5/2^+$	
858.53 *10*	$1/2^+$,$3/2^+$	
880.4 *4*	$1/2^+$,$3/2^+$,$5/2^+$	
915.3 *6*	1/2,3/2	
974.39 *8*	$1/2^+$,$3/2^+$	
1001.55 *12*	$1/2^+$,$3/2^+$	
1061.85 *7*	$1/2^-$,$3/2^-$	Suggested (2003Gr27) K-2 γ vibration built on ν3/2[521] .
1079.50 *4*	$1/2^-$,$3/2^-$	Suggested (2003Gr27) K-2 γ vibration built on ν5/2[523] .
1110.39 *8*	$1/2^-$,$3/2^-$	
1128.59 *11*	$1/2^+$,$3/2^+$	Suggested (2003Gr27) $K^\pi=1^-$ octupole vibration built on ν3/2[521] .
1140.08 *10*	$1/2^-$,$3/2^-$	
1145.99 *8*	$1/2^-$,$3/2^-$	
1159.59 *21*	$5/2^+$	Suggested (2003Gr27) $K^\pi=0^+$ excitation built on ν5/2[642] .
1178.4 *6*	$1/2^+$,$3/2^+$,$5/2^+$	
1284.45 *13*	1/2,3/2	
1325.3 *8*	1/2,3/2,5/2	
1344.0 *4*	$1/2^+$,$3/2^+$,$5/2^+$	
1394.45 *15*	$1/2^+$,$3/2^+$	
1400.2 *5*	$1/2^-$,$3/2^-$	
1431.24 *17*	$1/2^+$,$3/2^+$	
1446.5 *6*	$1/2^+$,$3/2^+$	
1468.33 *18*	$1/2^+$,$3/2^+$	
1477.75 *11*	$1/2^+$,$3/2^+$	
1505.1 *7*	$1/2^{(+)}$,$3/2^{(+)}$	
1520.90 *12*	$1/2^-$,$3/2^-$	
1540.1 *4*	$1/2^+$,$3/2^+$,$5/2^+$	
1545.5 *3*	1/2,3/2	
1560.58 *10*	$1/2^{(-)}$,$3/2^{(-)}$	
1571.97 *12*	1/2,3/2	
1579.21 *19*	$1/2^+$,$3/2^+$	
1584.51 *17*	$1/2^+$,$3/2^+$	
1593.12 *19*	$1/2^+$,$3/2^+$	

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^{158}Gd(n,γ) E=2.0 keV 2003Gr27 (continued)

^{159}Gd Levels (continued)

E(level)[†]	Jπ[‡]
1603.34 *11*	$1/2^-,3/2^-$
1642.50 *10*	$1/2^-,3/2^-$
1657.0 *5*	$1/2^+,3/2^+$
1673.31 *11*	$1/2^-,3/2^-$
1721.74 *19*	1/2,3/2
1746.0 *8*	$1/2^+,3/2^+$
1758.66 *10*	$1/2^-,3/2^-$
1772.57 *14*	1/2,3/2
1782.52 *11*	$1/2^-,3/2^-$
1808.5 *3*	1/2,3/2
1825.28 *16*	$1/2^-,3/2^-$
1831.5 *4*	1/2,3/2
1852.3 *5*	$1/2^+,3/2^+,5/2^+$
1869.09 *20*	$1/2^+,3/2^+$
1883.64 *9*	$1/2^-,3/2^-$
1900.1 *4*	$1/2^+,3/2^+$
1945.85 *24*	$1/2^-,3/2^-$
1954.46 *25*	1/2,3/2
1971.49 *18*	$1/2^{(-)},3/2^{(-)}$
1983.2 *5*	$1/2^+,3/2^+$
2007.5 *4*	$1/2^+,3/2^+$
2011.65 *14*	$1/2^-,3/2^-$
2033.00 *18*	$1/2^-,3/2^-$
2039.68 *16*	$1/2^+,3/2^+$
2050.86 *20*	$1/2^+,3/2^+$
2074.18 *12*	$1/2^-,3/2^-$
2087.6 *9*	$1/2^{(-)},3/2^{(-)}$
2110.6 *5*	$1/2^{(-)},3/2^{(-)}$
2116.7 *5*	$1/2^+,3/2^+$
2121.7 *5*	$1/2^{(-)},3/2^{(-)}$
2137.6 *5*	$1/2^{(+)},3/2^{(+)}$
2151.2 *4*	1/2,3/2
2158.59 *16*	1/2,3/2
2165.39 *17*	1/2,3/2
2182.39 *12*	$1/2^-,3/2^-$
2187.98 *23*	$1/2^-,3/2^-$
2193.7 *6*	$1/2^+,3/2^+$
2206.6 *10*	1/2,3/2
2210.7 *3*	$1/2^-,3/2^-$
2215.0 *3*	1/2,3/2
2222.0 *5*	1/2,3/2,5/2
2234.34 *14*	$1/2^-,3/2^-$
2252.4 *3*	$1/2^+,3/2^+$
2257.02 *14*	$1/2^-,3/2^-$
2261.34 *23*	$1/2^+,3/2^+$
2283.70 *20*	$1/2^+,3/2^+$
2287.80 *18*	$1/2^-,3/2^-$
2300.8 *4*	1/2,3/2
2315.22 *17*	$1/2^-,3/2^-$
2318.4 *4*	$1/2^+,3/2^+$
2334.11 *16*	$1/2^-,3/2^-$
2346.85 *22*	$1/2^-,3/2^-$
2353.2 *3*	$1/2^-,3/2^-$
2357.71 *13*	$1/2^-,3/2^-$
2378.40 *17*	$1/2^+,3/2^+,5/2^+$

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^{158}Gd(n,γ) E=2.0 keV 2003Gr27 (continued)

^{159}Gd Levels (continued)

E(level)†	Jπ‡	Comments
2386.33 *24*	1/2⁻,3/2⁻	
2391.37 *16*	1/2⁻,3/2⁻	
2400.4 *3*	1/2,3/2	
2411.18 *18*	1/2⁻,3/2⁻	
2415.8 *3*	1/2⁺,3/2⁺	
2421.79 *20*	1/2,3/2	
2438.97 *26*	1/2⁻,3/2⁻	
2446.24 *22*	1/2⁻,3/2⁻	
2452.98 *27*	1/2⁻,3/2⁻	
2470.5 *3*	1/2,3/2	
2486.7 *3*	1/2,3/2	
2495.5 *3*	5/2⁺	
2539.4 *3*	1/2⁻,3/2⁻	
2546.1 *3*	1/2,3/2	
2558.09 *24*	1/2,3/2	
2564.8 *4*	1/2,3/2	
2587.87 *22*	1/2,3/2	
2617.9 *3*	1/2,3/2	
2625.7 *4*	1/2,3/2	
2642.5 *3*	1/2⁻,3/2⁻	
2668.5 *5*	1/2,3/2	
2676.7 *5*	1/2⁺,3/2⁺,5/2⁺	
2687.79 *21*	1/2⁻,3/2⁻	
2700.4 *4*	1/2⁺,3/2⁺,5/2⁺	
2705.3 *4*	1/2,3/2	
2720.5 *3*	1/2,3/2	
2728.0 *3*	1/2,3/2	
2734.3 *4*	1/2⁺,3/2⁺	
2748.7 *5*	1/2⁺,3/2⁺	
2754.3 *4*	1/2⁺,3/2⁺	
2762.6 *5*	1/2,3/2	
2767.2 *4*	1/2⁻,3/2⁻	
2791.4 *6*	1/2,3/2	
2793.96 *21*	1/2⁻,3/2⁻	
2815.4 *9*	1/2,3/2	
2849.0 *4*	1/2⁻,3/2⁻	
2867.3 *7*	1/2,3/2	
2874.1 *4*	1/2⁻,3/2⁻	
2883.1 *7*	1/2,3/2	
2906.0 *6*	1/2,3/2	
2918.4 *5*	1/2,3/2	
2936.6 *3*	1/2⁻,3/2⁻	
2948.4 *4*	1/2⁻,3/2⁻	
2959.8 *4*	1/2⁻,3/2⁻	
2967.2 *6*	1/2⁻,3/2⁻	
2996.4 *3*	1/2,3/2	
3010.2 *4*	1/2⁻,3/2⁻	
3019.1 *4*	1/2,3/2	
3023.6 *9*	1/2,3/2	
3029.5 *4*	1/2⁻,3/2⁻	
3041.8 *4*	1/2⁻,3/2⁻	
(5945.32 *12*)	1/2,3/2⁻	E(level): S(n)+E(n), S(n)=5943.32 *12* (averaged value from the 2- and 24-keV n-capture data of 2003Gr27) and E(n)=2.0 keV. 2009AuZZ report S(n)=5943.21 *8*. Jπ: from s- and/or p-wave capture in the ^{158}Gd g.s. ($J^\pi=0^+$). This "state" directly populates levels of spins 1/2,3/2,5/2⁺ only.

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^{158}Gd(n,γ) E=2.0 keV 2003Gr27 (continued)

^{159}Gd Levels (continued)

† Values represent weighted averages of the data from the 2- and 24-keV n-capture studies of 2003Gr27. The uncertainties assigned include systematic errors.

‡ Assignments are based on multipolarities of primary γ's deduced from values of Iγ(24 keV)/Iγ(2 keV) as a function of Eγ and on the evaluation of the photon strength dependence on Eγ.

γ(^{159}Gd)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π
2903.6 *7*	7.6 *12*	(5945.32)	1/2,3/2$^-$	3041.8	1/2$^-$,3/2$^-$
2916.1 *8*	5.9 *12*	(5945.32)	1/2,3/2$^-$	3029.5	1/2$^-$,3/2$^-$
2921.7 *9*	4.6 *12*	(5945.32)	1/2,3/2$^-$	3023.6	1/2,3/2
2926.3 *4*	8.3 *12*	(5945.32)	1/2,3/2$^-$	3019.1	1/2,3/2
2935.5 *10*	5.5 *11*	(5945.32)	1/2,3/2$^-$	3010.2	1/2$^-$,3/2$^-$
2948.96 *28*	12.0 *12*	(5945.32)	1/2,3/2$^-$	2996.4	1/2,3/2
2977.6 *10*	6.2 *11*	(5945.32)	1/2,3/2$^-$	2967.2	1/2$^-$,3/2$^-$
2985.6 *5*	6.9 *11*	(5945.32)	1/2,3/2$^-$	2959.8	1/2$^-$,3/2$^-$
2997.4 *5*	5.9 *10*	(5945.32)	1/2,3/2$^-$	2948.4	1/2$^-$,3/2$^-$
3009.6 *5*	8.1 *10*	(5945.32)	1/2,3/2$^-$	2936.6	1/2$^-$,3/2$^-$
3027.0 *5*	8.2 *10*	(5945.32)	1/2,3/2$^-$	2918.4	1/2,3/2
3039.3 *6*	6.7 *10*	(5945.32)	1/2,3/2$^-$	2906.0	1/2,3/2
3062.3 *7*	4.6 *9*	(5945.32)	1/2,3/2$^-$	2883.1	1/2,3/2
3071.2 *5*	7.5 *9*	(5945.32)	1/2,3/2$^-$	2874.1	1/2$^-$,3/2$^-$
3078.0 *7*	4.5 *9*	(5945.32)	1/2,3/2$^-$	2867.3	1/2,3/2
3096.7 *5*	6.3 *9*	(5945.32)	1/2,3/2$^-$	2849.0	1/2$^-$,3/2$^-$
3129.9 *9*	3.6 *8*	(5945.32)	1/2,3/2$^-$	2815.4	1/2,3/2
3150.7 *4*	9.7 *8*	(5945.32)	1/2,3/2$^-$	2793.96	1/2$^-$,3/2$^-$
3153.9 *6*	4.4 *8*	(5945.32)	1/2,3/2$^-$	2791.4	1/2,3/2
3178.1 *4*	7.0 *8*	(5945.32)	1/2,3/2$^-$	2767.2	1/2$^-$,3/2$^-$
3183.2 *7*	4.0 *8*	(5945.32)	1/2,3/2$^-$	2762.6	1/2,3/2
3191.8 *7*	4.7 *8*	(5945.32)	1/2,3/2$^-$	2754.3	1/2$^+$,3/2$^+$
3196.9 *10*	4.1 *8*	(5945.32)	1/2,3/2$^-$	2748.7	1/2$^+$,3/2$^+$
3210.1 *9*	4.1 *7*	(5945.32)	1/2,3/2$^-$	2734.3	1/2$^+$,3/2$^+$
3216.7 *6*	5.9 *7*	(5945.32)	1/2,3/2$^-$	2728.0	1/2,3/2
3224.8 *6*	6.5 *7*	(5945.32)	1/2,3/2$^-$	2720.5	1/2,3/2
3239.0 *7*	5.9 *7*	(5945.32)	1/2,3/2$^-$	2705.3	1/2,3/2
3245.4 *10*	3.6 *7*	(5945.32)	1/2,3/2$^-$	2700.4	1/2$^+$,3/2$^+$,5/2$^+$
3257.50 *25*	12.1 *7*	(5945.32)	1/2,3/2$^-$	2687.79	1/2$^-$,3/2$^-$
3268.8 *15*	3.2 *7*	(5945.32)	1/2,3/2$^-$	2676.7	1/2$^+$,3/2$^+$,5/2$^+$
3276.8 *5*	6.3 *7*	(5945.32)	1/2,3/2$^-$	2668.5	1/2,3/2
3303.1 *4*	9.1 *7*	(5945.32)	1/2,3/2$^-$	2642.5	1/2$^-$,3/2$^-$
3319.7 *4*	5.9 *6*	(5945.32)	1/2,3/2$^-$	2625.7	1/2,3/2
3327.5 *3*	9.6 *6*	(5945.32)	1/2,3/2$^-$	2617.9	1/2,3/2
3357.3 *4*	7.9 *6*	(5945.32)	1/2,3/2$^-$	2587.87	1/2,3/2
3380.5 *4*	7.2 *6*	(5945.32)	1/2,3/2$^-$	2564.8	1/2,3/2
3387.23 *24*	10.0 *6*	(5945.32)	1/2,3/2$^-$	2558.09	1/2,3/2
3399.2 *3*	8.2 *6*	(5945.32)	1/2,3/2$^-$	2546.1	1/2,3/2
3405.97 *28*	9.2 *6*	(5945.32)	1/2,3/2$^-$	2539.4	1/2$^-$,3/2$^-$
3449.7 *8*	2.9 *5*	(5945.32)	1/2,3/2$^-$	2495.5	5/2$^+$
3458.6 *3*	8.9 *5*	(5945.32)	1/2,3/2$^-$	2486.7	1/2,3/2
3474.8 *3*	8.5 *5*	(5945.32)	1/2,3/2$^-$	2470.5	1/2,3/2
3492.5 *3*	9.2 *5*	(5945.32)	1/2,3/2$^-$	2452.98	1/2$^-$,3/2$^-$
3498.96 *26*	9.9 *5*	(5945.32)	1/2,3/2$^-$	2446.24	1/2$^-$,3/2$^-$
3506.1 *4*	6.9 *5*	(5945.32)	1/2,3/2$^-$	2438.97	1/2$^-$,3/2$^-$
3523.4 *4*	7.9 *5*	(5945.32)	1/2,3/2$^-$	2421.79	1/2,3/2
3528.7 *5*	5.6 *5*	(5945.32)	1/2,3/2$^-$	2415.8	1/2$^+$,3/2$^+$

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^{158}Gd(n,γ) E=2.0 keV 2003Gr27 (continued)

γ(^{159}Gd) (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Comments
3533.97 *22*	10.7 *5*	(5945.32)	1/2,3/2$^-$	2411.18	1/2$^-$,3/2$^-$	
3544.5 *4*	6.7 *5*	(5945.32)	1/2,3/2$^-$	2400.4	1/2,3/2	
3553.99 *19*	12.7 *5*	(5945.32)	1/2,3/2$^-$	2391.37	1/2$^-$,3/2$^-$	
3559.1 *3*	8.4 *5*	(5945.32)	1/2,3/2$^-$	2386.33	1/2$^-$,3/2$^-$	
3566.2 *4*	5.6 *5*	(5945.32)	1/2,3/2$^-$	2378.40	1/2$^+$,3/2$^+$,5/2$^+$	
3587.69 *15*	17.3 *5*	(5945.32)	1/2,3/2$^-$	2357.71	1/2$^-$,3/2$^-$	
3592.2 *4*	6.8 *5*	(5945.32)	1/2,3/2$^-$	2353.2	1/2$^-$,3/2$^-$	
3598.7 *4*	7.9 *5*	(5945.32)	1/2,3/2$^-$	2346.85	1/2$^-$,3/2$^-$	
3611.39 *21*	11.6 *5*	(5945.32)	1/2,3/2$^-$	2334.11	1/2$^-$,3/2$^-$	
3626.9 *4*	6.9 *4*	(5945.32)	1/2,3/2$^-$	2318.4	1/2$^+$,3/2$^+$	
3630.52 *20*	11.6 *5*	(5945.32)	1/2,3/2$^-$	2315.22	1/2$^-$,3/2$^-$	
3644.5 *4*	6.8 *4*	(5945.32)	1/2,3/2$^-$	2300.8	1/2,3/2	
3657.79 *21*	10.1 *4*	(5945.32)	1/2,3/2$^-$	2287.80	1/2$^-$,3/2$^-$	
3661.5 *4*	5.7 *4*	(5945.32)	1/2,3/2$^-$	2283.70	1/2$^+$,3/2$^+$	
3685.0 *4*	6.6 *4*	(5945.32)	1/2,3/2$^-$	2261.34	1/2$^+$,3/2$^+$	
3688.77 *19*	12.4 *4*	(5945.32)	1/2,3/2$^-$	2257.02	1/2$^-$,3/2$^-$	
3692.6 *5*	5.2 *4*	(5945.32)	1/2,3/2$^-$	2252.4	1/2$^+$,3/2$^+$	
3711.00 *17*	13.5 *4*	(5945.32)	1/2,3/2$^-$	2234.34	1/2$^-$,3/2$^-$	
3723.3 *7*	2.3 *4*	(5945.32)	1/2,3/2$^-$	2222.0	1/2,3/2,5/2	
3730.3 *4*	6.3 *4*	(5945.32)	1/2,3/2$^-$	2215.0	1/2,3/2	
3734.6 *4*	6.3 *4*	(5945.32)	1/2,3/2$^-$	2210.7	1/2$^-$,3/2$^-$	
3738.5	3.3 *4*	(5945.32)	1/2,3/2$^-$	2206.6	1/2,3/2	E_γ: from E(capture state)−2206.6 computed by the evaluator. Eγ=2205.1 *7* is listed by 2003Gr27 in their table (table 3) of primary transitions from 2- and 24-keV n-capture, but this is most likely a secondary transition from the 2206.6 level (which is the level shown there as the final state for that primary transition). I_γ: the evaluator assumes that the intensity listed in table 3 of 2003Gr27 is that of the primary transition from the capture state.
3751.6 *6*	4.0 *4*	(5945.32)	1/2,3/2$^-$	2193.7	1/2$^+$,3/2$^+$	
3757.0 *3*	8.7 *4*	(5945.32)	1/2,3/2$^-$	2187.98	1/2$^-$,3/2$^-$	
3762.81 *13*	18.1 *4*	(5945.32)	1/2,3/2$^-$	2182.39	1/2$^-$,3/2$^-$	
3780.40 *23*	9.2 *4*	(5945.32)	1/2,3/2$^-$	2165.39	1/2,3/2	
3787.26 *20*	10.5 *4*	(5945.32)	1/2,3/2$^-$	2158.59	1/2,3/2	
3794.7 *5*	4.7 *3*	(5945.32)	1/2,3/2$^-$	2151.2	1/2,3/2	
3807.7 *5*	5.3 *3*	(5945.32)	1/2,3/2$^-$	2137.6	1/2$^{(+)}$,3/2$^{(+)}$	
3823.6 *6*	3.7 *3*	(5945.32)	1/2,3/2$^-$	2121.7	1/2$^{(-)}$,3/2$^{(-)}$	
3828.6 *5*	5.3 *3*	(5945.32)	1/2,3/2$^-$	2116.7	1/2$^+$,3/2$^+$	
3835.3 *6*	3.7 *3*	(5945.32)	1/2,3/2$^-$	2110.6	1/2$^{(-)}$,3/2$^{(-)}$	
3857.3 *10*	2.1 *3*	(5945.32)	1/2,3/2$^-$	2087.6	1/2$^{(-)}$,3/2$^{(-)}$	
3870.88 *15*	14.1 *4*	(5945.32)	1/2,3/2$^-$	2074.18	1/2$^-$,3/2$^-$	
3894.4 *4*	5.6 *3*	(5945.32)	1/2,3/2$^-$	2050.86	1/2$^+$,3/2$^+$	
3905.38 *24*	8.0 *3*	(5945.32)	1/2,3/2$^-$	2039.68	1/2$^+$,3/2$^+$	
3912.31 *22*	9.0 *3*	(5945.32)	1/2,3/2$^-$	2033.00	1/2$^-$,3/2$^-$	
3933.90 *16*	12.4 *3*	(5945.32)	1/2,3/2$^-$	2011.65	1/2$^-$,3/2$^-$	
3938.0 *6*	3.0 *3*	(5945.32)	1/2,3/2$^-$	2007.5	1/2$^+$,3/2$^+$	
3961.8 *5*	3.1 *3*	(5945.32)	1/2,3/2$^-$	1983.2	1/2$^+$,3/2$^+$	
3974.1 *3*	6.8 *3*	(5945.32)	1/2,3/2$^-$	1971.49	1/2$^{(-)}$,3/2$^{(-)}$	
3990.7 *4*	5.5 *3*	(5945.32)	1/2,3/2$^-$	1954.46	1/2,3/2	
3999.3 *4*	5.5 *3*	(5945.32)	1/2,3/2$^-$	1945.85	1/2$^-$,3/2$^-$	
4044.8 *5*	3.9 *3*	(5945.32)	1/2,3/2$^-$	1900.1	1/2$^+$,3/2$^+$	
4061.68 *10*	19.5 *3*	(5945.32)	1/2,3/2$^-$	1883.64	1/2$^-$,3/2$^-$	
4075.71 *28*	6.4 *3*	(5945.32)	1/2,3/2$^-$	1869.09	1/2$^+$,3/2$^+$	
4092.4 *8*	1.8 *3*	(5945.32)	1/2,3/2$^-$	1852.3	1/2$^+$,3/2$^+$,5/2$^+$	
4113.8 *4*	4.5 *3*	(5945.32)	1/2,3/2$^-$	1831.5	1/2,3/2	

Continued on next page (footnotes at end of table)

^{158}Gd(n,γ) E=2.0 keV 2003Gr27 (continued)

γ(^{159}Gd) (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π
4119.87 *17*	9.7 *3*	(5945.32)	1/2,3/2$^-$	1825.28	1/2$^-$,3/2$^-$
4136.7 *4*	4.7 *3*	(5945.32)	1/2,3/2$^-$	1808.5	1/2,3/2
4162.74 *12*	15.7 *3*	(5945.32)	1/2,3/2$^-$	1782.52	1/2$^-$,3/2$^-$
4172.90 *14*	14.0 *3*	(5945.32)	1/2,3/2$^-$	1772.57	1/2,3/2
4186.73 *12*	15.3 *3*	(5945.32)	1/2,3/2$^-$	1758.66	1/2$^-$,3/2$^-$
4196.4 *11*	2.4 *21*	(5945.32)	1/2,3/2$^-$	1746.0	1/2$^+$,3/2$^+$
4223.4 *3*	6.7 *3*	(5945.32)	1/2,3/2$^-$	1721.74	1/2,3/2
4271.97 *11*	14.9 *3*	(5945.32)	1/2,3/2$^-$	1673.31	1/2$^-$,3/2$^-$
4288.3 *5*	2.7 *20*	(5945.32)	1/2,3/2$^-$	1657.0	1/2$^+$,3/2$^+$
4302.68 *13*	14.2 *3*	(5945.32)	1/2,3/2$^-$	1642.50	1/2$^-$,3/2$^-$
4341.90 *13*	15.6 *3*	(5945.32)	1/2,3/2$^-$	1603.34	1/2$^-$,3/2$^-$
4352.3 *3*	6 *3*	(5945.32)	1/2,3/2$^-$	1593.12	1/2$^+$,3/2$^+$
4360.9 *3*	6 *3*	(5945.32)	1/2,3/2$^-$	1584.51	1/2$^+$,3/2$^+$
4365.8 *4*	5.3 *23*	(5945.32)	1/2,3/2$^-$	1579.21	1/2$^+$,3/2$^+$
4373.26 *17*	11 *3*	(5945.32)	1/2,3/2$^-$	1571.97	1/2,3/2
4384.76 *15*	12 *3*	(5945.32)	1/2,3/2$^-$	1560.58	1/2$^{(-)}$,3/2$^{(-)}$
4399.4 *4*	3.9 *21*	(5945.32)	1/2,3/2$^-$	1545.5	1/2,3/2
4405.3 *8*	2.2 *20*	(5945.32)	1/2,3/2$^-$	1540.1	1/2$^+$,3/2$^+$,5/2$^+$
4424.28 *15*	12 *3*	(5945.32)	1/2,3/2$^-$	1520.90	1/2$^-$,3/2$^-$
4438.9 *11*	2.0 *20*	(5945.32)	1/2,3/2$^-$	1505.1	1/2$^{(+)}$,3/2$^{(+)}$
4466.98 *20*	8.5 *25*	(5945.32)	1/2,3/2$^-$	1477.75	1/2$^+$,3/2$^+$
4477.4 *3*	5.5 *23*	(5945.32)	1/2,3/2$^-$	1468.33	1/2$^+$,3/2$^+$
4499.2 *7*	1.7 *12*	(5945.32)	1/2,3/2$^-$	1446.5	1/2$^+$,3/2$^+$
4513.91 *19*	8 *3*	(5945.32)	1/2,3/2$^-$	1431.24	1/2$^+$,3/2$^+$
4544.9 *6*	2.6 *21*	(5945.32)	1/2,3/2$^-$	1400.2	1/2$^-$,3/2$^-$
4550.8 *3*	5.2 *22*	(5945.32)	1/2,3/2$^-$	1394.45	1/2$^+$,3/2$^+$
4601.9 *6*	2.6 *23*	(5945.32)	1/2,3/2$^-$	1344.0	1/2$^+$,3/2$^+$,5/2$^+$
4620.6 *10*	2.0 *22*	(5945.32)	1/2,3/2$^-$	1325.3	1/2,3/2,5/2
4660.76 *15*	7 *3*	(5945.32)	1/2,3/2$^-$	1284.45	1/2,3/2
4768.0 *9*	1.7 *20*	(5945.32)	1/2,3/2$^-$	1178.4	1/2$^+$,3/2$^+$,5/2$^+$
4785.8 *6*	2.5 *21*	(5945.32)	1/2,3/2$^-$	1159.59	5/2$^+$
4799.11 *10*	19 *3*	(5945.32)	1/2,3/2$^-$	1145.99	1/2$^-$,3/2$^-$
4804.85 *13*	13 *3*	(5945.32)	1/2,3/2$^-$	1140.08	1/2$^-$,3/2$^-$
4816.00 *19*	8.5 *23*	(5945.32)	1/2,3/2$^-$	1128.59	1/2$^+$,3/2$^+$
4834.94 *8*	22 *3*	(5945.32)	1/2,3/2$^-$	1110.39	1/2$^-$,3/2$^-$
4865.83 *5*	38.4 *3*	(5945.32)	1/2,3/2$^-$	1079.50	1/2$^-$,3/2$^-$
4884.08 *10*	18.2 *25*	(5945.32)	1/2,3/2$^-$	1061.85	1/2$^-$,3/2$^-$
4943.66 *23*	6.9 *21*	(5945.32)	1/2,3/2$^-$	1001.55	1/2$^+$,3/2$^+$
4971.14 *12*	13 *3*	(5945.32)	1/2,3/2$^-$	974.39	1/2$^+$,3/2$^+$
5030.0 *6*	2.8 *22*	(5945.32)	1/2,3/2$^-$	915.3	1/2,3/2
5065.2 *6*	2.3 *10*	(5945.32)	1/2,3/2$^-$	880.4	1/2$^+$,3/2$^+$,5/2$^+$
5086.28 *18*	8.1 *22*	(5945.32)	1/2,3/2$^-$	858.53	1/2$^+$,3/2$^+$
5126.6 *6*	2.5 *12*	(5945.32)	1/2,3/2$^-$	818.59	5/2$^+$
5145.2 *6*	2.4 *10*	(5945.32)	1/2,3/2$^-$	800.59	5/2$^+$
5163.49 *14*	10.3 *23*	(5945.32)	1/2,3/2$^-$	782.08	1/2$^+$,3/2$^+$
5200.83 *12*	8.9 *24*	(5945.32)	1/2,3/2$^-$	744.48	1/2$^+$,3/2$^+$
5298.83 *23*	6.3 *23*	(5945.32)	1/2,3/2$^-$	646.93	5/2$^+$
5342.98 *14*	12 *3*	(5945.32)	1/2,3/2$^-$	601.87	1/2$^+$,3/2$^+$
5386.79 *4*	53.6 *3*	(5945.32)	1/2,3/2$^-$	558.36	1/2$^-$,3/2$^-$
5437.54 *7*	26.7 *25*	(5945.32)	1/2,3/2$^-$	507.75	1/2$^-$,3/2$^-$
5877.79 *8*	20 *3*	(5945.32)	1/2,3/2$^-$	67.65	5/2$^+$
5945.25 *3*	100.0 *4*	(5945.32)	1/2,3/2$^-$	0.0	1/2$^-$,3/2$^-$

^{158}Gd(n,γ) E=2.0 keV 2003Gr27

Level Scheme

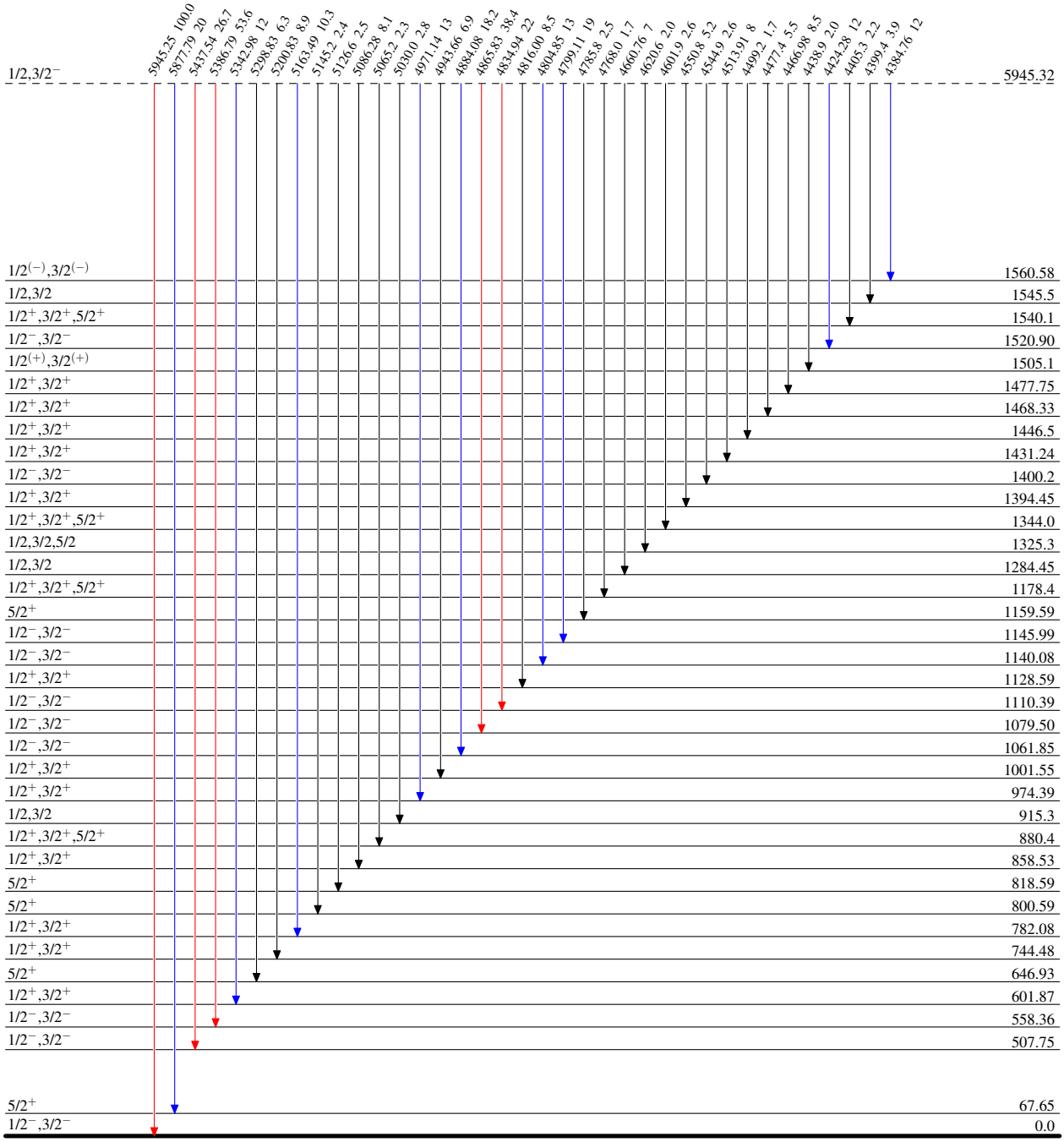
Intensities: Relative I_γ

Legend

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

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

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

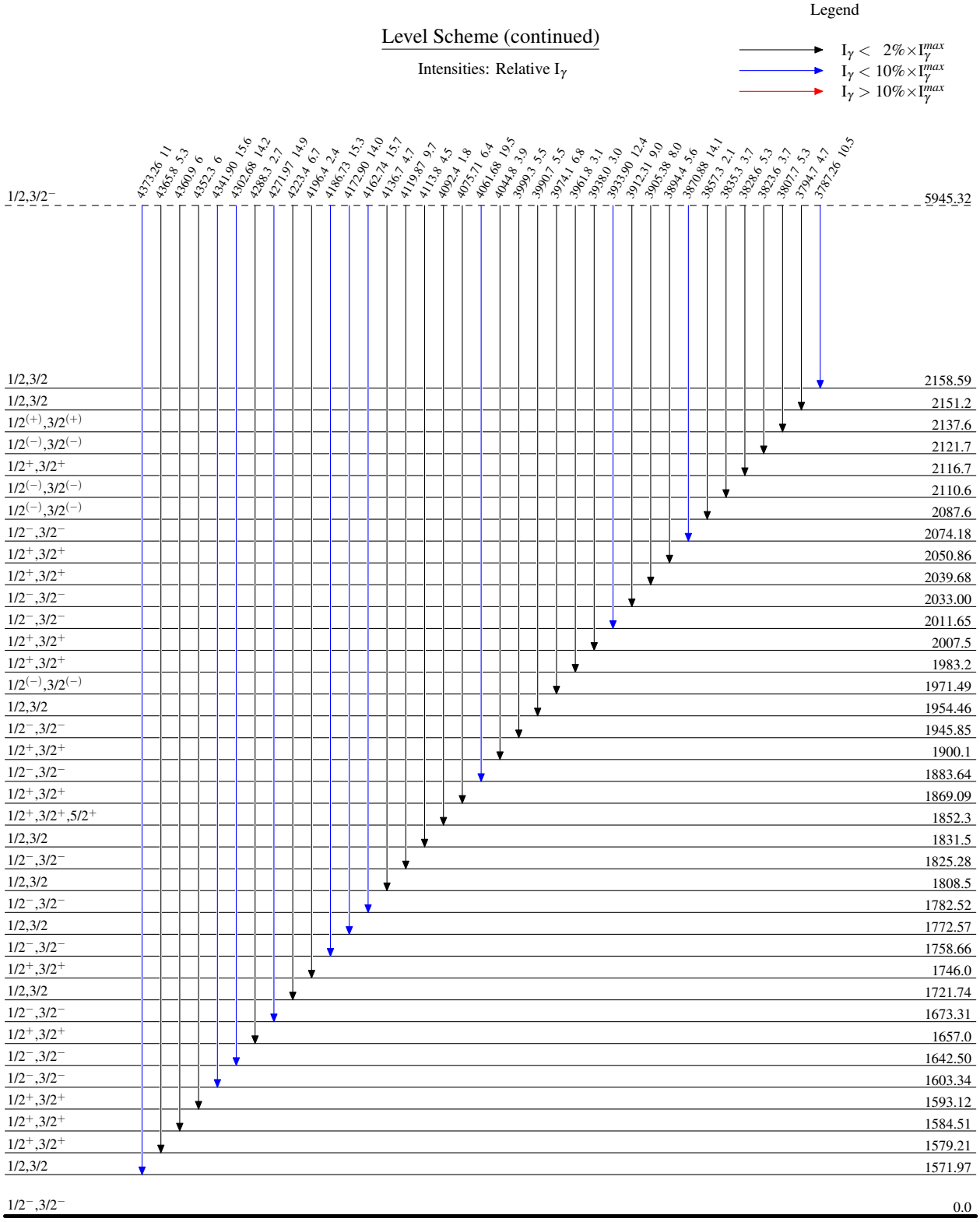


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=2.0 keV 2003Gr27

Level Scheme (continued)

Intensities: Relative I_γ

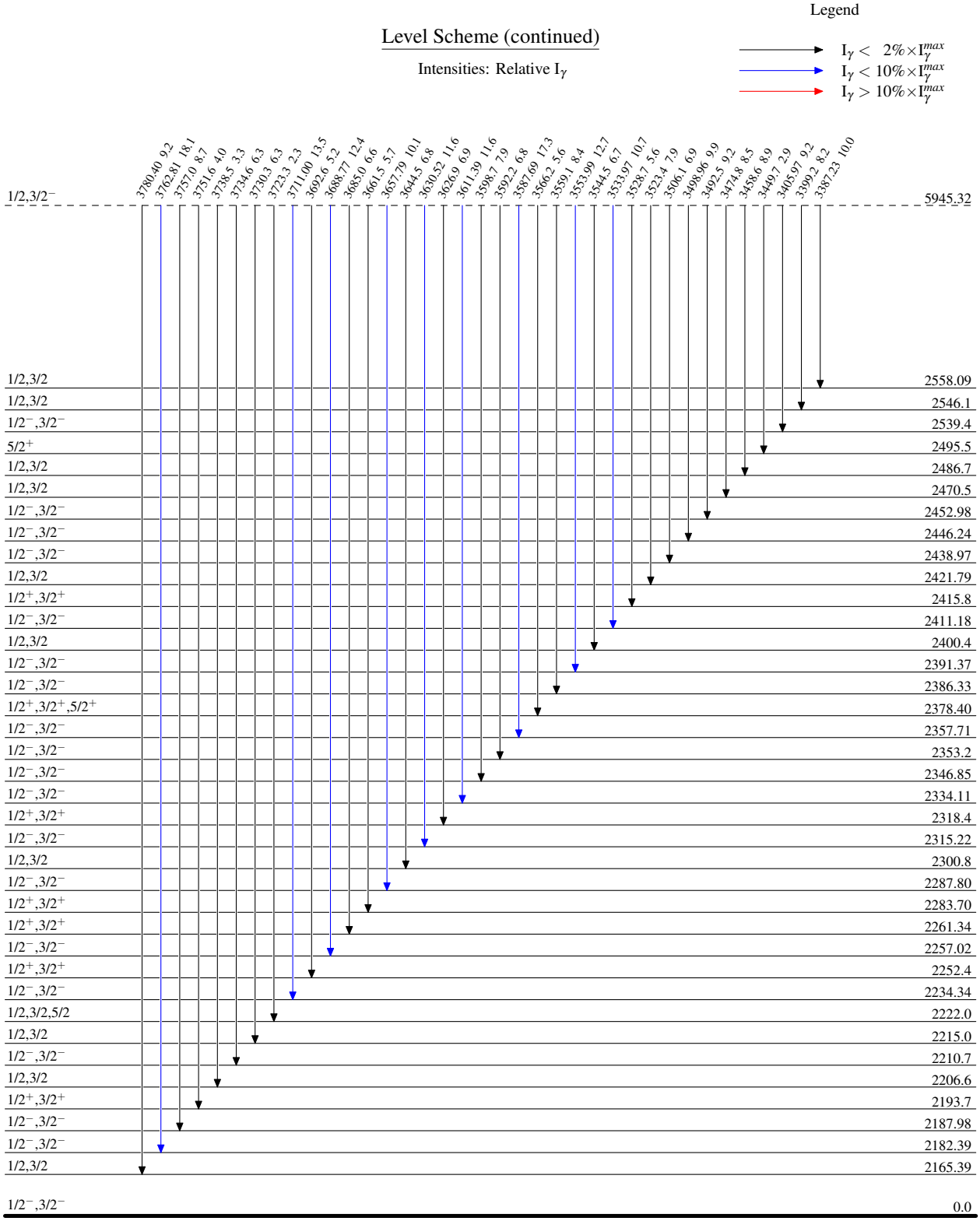


$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=2.0 keV 2003Gr27

Level Scheme (continued)

Intensities: Relative I_γ



$^{159}_{64}Gd_{95}$

^{158}Gd(n,γ) E=2.0 keV 2003Gr27

Level Scheme (continued)

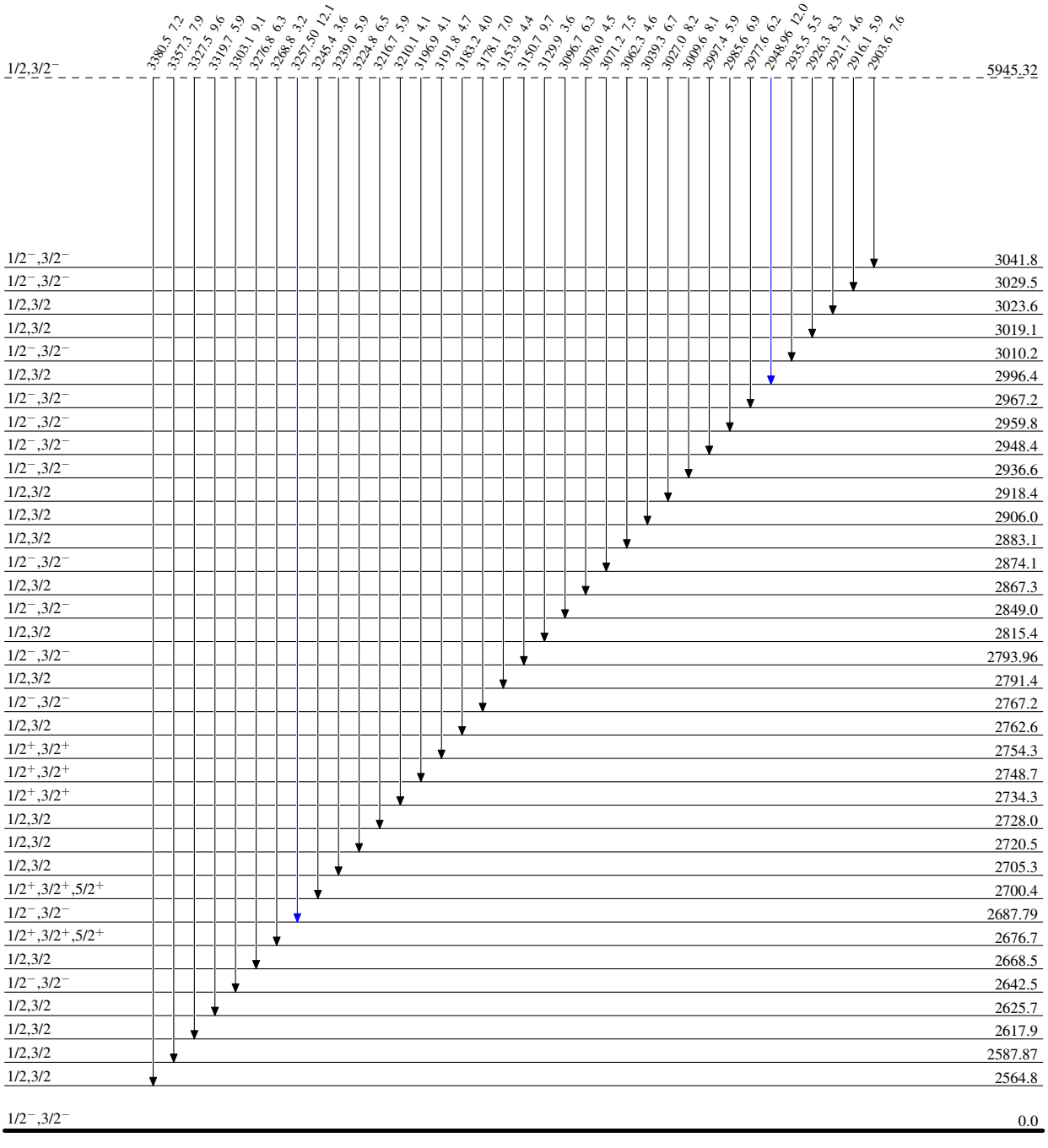
Intensities: Relative I_γ

Legend

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

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

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



$^{159}_{64}Gd_{95}$