

$^{153}\text{Eu}(\text{n},\gamma)$ E=2 keV: res av [1987Ba52](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 200,2 (2025)	22-Aug-2022

Additional information 1.

These data are from 2-keV resonance-averaged neutron capture ([1987Ba52](#)).

For experimental details, see the $^{154}\text{Eu}(\text{n},\gamma)$ E=th data set.

 ^{154}Eu Levels

E(level)	J^π	Comments
0.0	3^-	
66.4 8	2^+	
70.6 10	1^+	
81.68 12		
100.39 24		
122.63 13	2^-	
129.11 24	$4^+ \& 4^-$	
135.6 4	$1^+ \& 5^+$	
153.6 5	1^+ to 4^+	E(level): Level not observed in any of the other data sets. 1987Ba52 indicate that no level with these J^π values can be expected at this energy. The evaluator has not included it in the Adopted Levels.
162.68 16	1^-	
173.34 11	3^-	
181.07 15		
186.6 7	2^+	
204.2 3	$3^+, 4^+$	
214.14 11	3^-	
230.76 23	4^-	
235.7 6	4^-	
239.17 24	3^-	
250.3 6	$1^+, 2^+ \& 3^+$	
254.4 11	$4^+, 5^+$	
278.8 6		
282.0 7	$1^+, 2^+ \& 3^+$	
295.9 7	$3^+, 4^+$	
308.1 5	3^+	
315.02 26	1^-	
320.0 8	$3^+, 4^+$	
327.96 17	$3^+, 4^+ \& 4^-$	
334.4 3	$1^+, 2^+ \& 3^+$	
341.93 11		
349.5 8	2^+	
363.21 14		
372.1 7	2^+	
390.30 11		
402.0 5		
408.23 19		
419.3 3	2^-	
424.6 10		
429.1 5		
435.4 5	1^-	
450.98 12	$2^- \& 2^+$	
456.7 10		
467.1 5	4^-	
471.59 18		
478.54 14	3^-	
485.12 16		
504.86 16	3^-	

Continued on next page (footnotes at end of table)

$^{153}\text{Eu}(n,\gamma)$ E=2 keV: res av **1987Ba52** (continued) ^{154}Eu Levels (continued)

E(level)	J^π [†]	Comments
514.82 18		
522.8 5	3 ⁺	
532.37 19	4 ⁻ , (3) ⁻	
545.96 24	2 ⁻	
550.73 25	1 ⁻ & 4 ⁻	
555.5 4	4 ⁻	
572.0 3	4 ⁻	
583.88 15	3 ⁻	
592.58 13	3 ⁻ & 4 ⁻	
599.38 15	2 ⁻	
6444		E(level): Value is S(n) plus 2 keV (to include the neutron-beam energy).

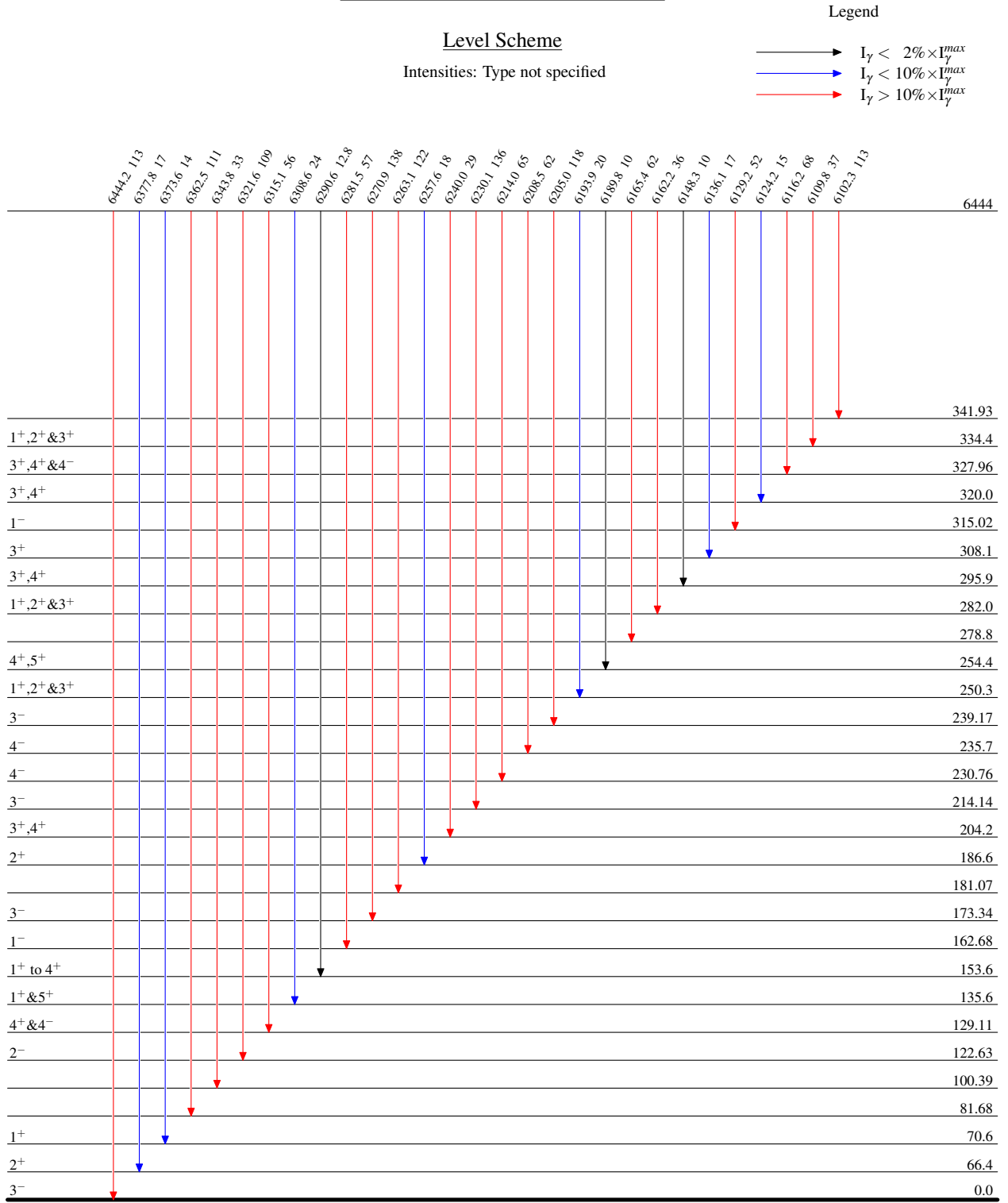
[†] From **1987Ba52** and based on all neutron-capture data available, namely, with thermal, 2-keV resonance-averaged, 2.4-eV resonance, and 3.3-eV resonance neutrons. In several cases, a level listed here represents two or more levels reported in thermal-neutron capture.

 $\gamma(^{154}\text{Eu})$

E_γ [†]	I_γ [‡]	$E_i(\text{level})$	E_f	J_f^π	E_γ [†]	I_γ [‡]	$E_i(\text{level})$	E_f	J_f^π
5844.8	105 8	6444	599.38	2 ⁻	6109.8	37 5	6444	334.4	1 ⁺ , 2 ⁺ & 3 ⁺
5851.6	135 9	6444	592.58	3 ⁻ & 4 ⁻	6116.2	68 6	6444	327.96	3 ⁺ , 4 ⁺ & 4 ⁻
5860.3	83 8	6444	583.88	3 ⁻	6124.2	15 4	6444	320.0	3 ⁺ , 4 ⁺
5872.2	47 12	6444	572.0	4 ⁻	6129.2	52 5	6444	315.02	1 ⁻
5888.7	56 12	6444	555.5	4 ⁻	6136.1	17 4	6444	308.1	3 ⁺
5893.5	94 12	6444	550.73	1 ⁻ & 4 ⁻	6148.3	10 4	6444	295.9	3 ⁺ , 4 ⁺
5898.2	72 10	6444	545.96	2 ⁻	6162.2	36 20	6444	282.0	1 ⁺ , 2 ⁺ & 3 ⁺
5911.8	79 12	6444	532.37	4 ⁻ , (3) ⁻	6165.4	62 18	6444	278.8	
5921.4	53 15	6444	522.8	3 ⁺	6189.8	10 5	6444	254.4	4 ⁺ , 5 ⁺
5929.4	136 10	6444	514.82		6193.9	20 5	6444	250.3	1 ⁺ , 2 ⁺ & 3 ⁺
5939.3	89 8	6444	504.86	3 ⁻	6205.0	118 15	6444	239.17	3 ⁻
5959.1	90 8	6444	485.12		6208.5	62 14	6444	235.7	4 ⁻
5965.7	119 9	6444	478.54	3 ⁻	6214.0	65 7	6444	230.76	4 ⁻
5972.6	139 10	6444	471.59		6230.1	136 7	6444	214.14	3 ⁻
5977.1	40 12	6444	467.1	4 ⁻	6240.0	29 5	6444	204.2	3 ⁺ , 4 ⁺
5987.5	8 4	6444	456.7		6257.6	18 4	6444	186.6	2 ⁺
5993.2	90 8	6444	450.98	2 ⁻ & 2 ⁺	6263.1	122 6	6444	181.07	
6008.8	50 8	6444	435.4	1 ⁻	6270.9	138 7	6444	173.34	3 ⁻
6015.1	126 21	6444	429.1		6281.5	57 4	6444	162.68	1 ⁻
6019.6	67 19	6444	424.6		6290.6	12.8 24	6444	153.6	1 ⁺ to 4 ⁺
6024.9	101 13	6444	419.3	2 ⁻	6308.6	24 4	6444	135.6	1 ⁺ & 5 ⁺
6036.0	131 11	6444	408.23		6315.1	56 5	6444	129.11	4 ⁺ & 4 ⁻
6042.2	43 8	6444	402.0		6321.6	109 7	6444	122.63	2 ⁻
6053.9	106 8	6444	390.30		6343.8	33 4	6444	100.39	
6072.1	11 4	6444	372.1	2 ⁺	6362.5	111 7	6444	81.68	
6081.0	73 6	6444	363.21		6373.6	14 5	6444	70.6	1 ⁺
6094.7	11 6	6444	349.5	2 ⁺	6377.8	17 5	6444	66.4	2 ⁺
6102.3	113 8	6444	341.93		6444.2	113 8	6444	0.0	3 ⁻

[†] Nominal values for primary γ 's only; computed from the difference of the capture-state energy (6442.2 plus 2 keV) and the respective final-state energy.

[‡] Values are those from **1987Ba52**, divided by 10.

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Level Scheme (continued)

Intensities: Type not specified

Legend

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

