

$^{154}\text{Gd}(e,e')$ 1986He09,1989Ha20

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

$^{154}\text{Gd}(e,e')$ measurements have been made with $E(e)=78\text{-}380$ MeV to study collective levels below 1 MeV (1986He09. Other: 1983He21) and with $E(e)=25\text{-}48$ MeV to study 1^+ levels (1989Ha20).

Theory and model calculations related to M1 excitations include: 1987Ha38, 1987Ra30, 1988We08, 1989Bi01, 1989De42, 1989Ra01, 1990Fa09, 1990Li07, 1990Vi01, 1991De05, and 1991Ra03.

[Additional information 1.](#)

 ^{154}Gd Levels

Levels below 1 MeV are members of the ground-state band, the β -vibrational band (681 and 816 keV), and γ -vibrational band (996 keV). $B(M1)$ values are from 1989Ha20 and $B(E2)$, $B(E4)$, and $B(E6)$ values are from 1986He09.

E(level)	J^π [†]	Comments
0	0^+	
123	2^+	$B(E2)\uparrow=3.87\ 6$
371	4^+	$B(E4)\uparrow=0.146\ 12$
681	0^+	
718	6^+	$B(E6)\uparrow=0.0034\ 7$
816	2^+	$B(E2)\uparrow=0.0216\ 16$
996	2^+	$B(E2)\uparrow=0.132\ 5$
2860 [‡]	1^+	J^π : Authors show this value in parentheses.
2936	1^+	$B(M1)\uparrow=0.95\ 10$ $B(M1)\uparrow$: For the four 1^+ levels, the summed $B(M1)=2.6\ 5$.
3080 [‡]	(1^+)	
3120 [‡]	(1^+)	

[†] From the authors' assignments, except those in parentheses which are the evaluator's assignments based on comments of 1989Ha20. Values agree with the adopted values, except as noted.

[‡] Estimated by evaluator from fig. 3 of 1989Ha20.