

$^{156}\text{Gd(d,p)} \quad 1967\text{Tj01}$

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 132, 1 (2016)	4-Dec-2015

$E_d=12.1$ MeV and the outgoing p measured in magnetic spectrometer at 3 angles with FWHM ≈ 13 keV. Other: gross features of (d,p) spectrum measured to deduce strength functions ([1974Ba26](#)).

 $^{157}\text{Gd Levels}$

Additional information 1.

E(level) [‡]	J^π [†]	L	S [#]	Comments
0.0@	3/2 ⁻		55	
≈ 62 &	5/2 ⁺		2	
133@ 3	7/2 ⁻		132	
181& 3	9/2 ⁺		25	
228@ 3	9/2 ⁻		9	
≈ 276 &	11/2 ⁺		3	
315 3			3	
≈ 346 @	11/2 ⁻		5	
360& 3	13/2 ⁺		50	
435 ^a 3	5/2 ⁻		28	
478 ^b 3	3/2 ⁺		31	
518 ^a 3	7/2 ⁻		103	
617 ^a 3	9/2 ⁻		20	
665 3			6	J^π : Assignment in Adopted Levels is 9/2 ⁺ .
686 ^c 3	1/2 ⁺		70	
704 ^d 3	1/2 ⁻		128	
745 ^d 3	3/2 ⁻		20	
795 ^d 3	5/2 ⁻		70	
812 ^e 3	3/2 ⁻		84	
834 3			38	
903 ^d 3	7/2 ⁻		39	
965 3			51	
≈ 988 ^d	9/2 ⁻		4	
1039 5			4	
1117 5			43	
1142 5			14	
1185 5			5	
1206 5			5	
1289 5			3	
1312 5			13	
1331 5			7	
1354 5			11	
1391 ^f 5	(7/2 ⁻)	3	95	
1437 5			2	
1472 5			19	
1487 5			19	
1519 5			5	
1555 5			11	
1593 5			50	
1614 5			17	

Continued on next page (footnotes at end of table)

$^{156}\text{Gd(d,p)}$ [1967Tj01](#) (continued) ^{157}Gd Levels (continued)

<u>E(level)[‡]</u>	<u>S[#]</u>	<u>E(level)[‡]</u>	<u>S[#]</u>	<u>E(level)[‡]</u>	<u>S[#]</u>
1660 5	34	1793 5	19	1845 5	35
1744 5	62	1809 5	15	1869 5	40
1767 5	11	1833 5	35	1906 5	188
				1929 5	27

[†] Nilsson configuration and J^π assignments ([1967Tj01](#)) are based on comparison of measured and theoretical DWBA cross sections to the various rotational bands and take into account the related (d,t) study ([1967Tj01](#)). These assignments agree with those in the Adopted Levels.

[‡] Uncertainties are 3 keV below 1 MeV and 5 keV above 1 MeV as given ([1967Tj01](#)) in general statement. Specific values given by evaluator.

[#] Label= $d\sigma/d\Omega(90^\circ)$ ($\mu\text{b/sr}$).

[@] Band(A): 3/2[521] band.

[&] Band(B): 5/2[642] band.

^a Band(C): 5/2[523] band.

^b Band(D): 3/2[402] band.

^c Band(E): 1/2[400] band.

^d Band(F): 1/2[521] band.

^e Band(G): 1/2[530] band.

^f Band(H): Possibly 5/2[512] band.

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Band(F): 1/2[521] band

9/2⁻ ≈988

7/2⁻ 903

5/2⁻ 795

3/2⁻ 745

Band(E): 1/2[400] band

1/2⁺ 686

Band(C): 5/2[523] band

9/2⁻ 617

7/2⁻ 518

Band(D): 3/2[402] band

3/2⁺ 478

5/2⁻ 435

Band(A): 3/2[521] band

11/2⁻ ≈346

Band(B): 5/2[642] band

13/2⁺ 360

11/2⁺ ≈276

9/2⁻ 228

9/2⁺ 181

7/2⁻ 133

5/2⁺ ≈62

3/2⁻ 0.0

<u>¹⁵⁶Gd(d,p) 1967Tj01 (continued)</u>			
Band(G): 1/2[530] band		Band(H): Possibly 5/2[512] band	
<u>3/2⁻</u>	<u>812</u>	<u>(7/2⁻)</u>	<u>1391</u>

¹⁵⁷₆₄Gd₉₃