

$^{185}\text{Re}(\text{d,p})$ 1969La11

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. C. Batchelder and A. M. Hurst, M. S. Basunia		NDS 183, 1 (2022)	1-Mar-2022

E=12-MeV deuterons focused on a $\approx 99\%$ enriched $\leq 150\text{-}\mu\text{g}/\text{cm}^2$ ^{185}Re target (ground state $J^\pi=5/2^+$) on a 100-200 $\mu\text{g}/\text{cm}^2$ carbon-film backing at the Florida State University tandem Van de Graaff accelerator. Emerging protons were momentum analyzed using a Browne-Buechner broad-range magnetic spectrograph and detected by a set of three nuclear emulsion plates lying along the focal plane. Absorber foils were inserted in front of plates to eliminate all but the proton tracks. Raw spectrograph data were analyzed using the computer code STRILDE to determine Q values and cross sections. The (d,p) spectra were analyzed at seven angles: $\theta(\text{lab})=22.5^\circ, 26^\circ, 35^\circ, 45^\circ, 65^\circ, 90^\circ, 115^\circ$; measured $\sigma(\theta)$. Typical exposures ranged from 5000-11000 μC . A ground-state (d,p) Q value of 3939 keV 25 was determined.

 ^{186}Re Levels

E(level) [†]	L [‡]	E(level) [†]	E(level) [†]	E(level) [†]
0 2		320 2	547 10	803 10
60.6 20	3,4,5	342? 2	567 10	854 [#] 10
101 2	1	377 2	576 10	867 [#] 10
147 2		414 3	643 10	881 [#] 10
180 [@] 2	3 [@]	468 2	683 10	900 [#] 10
210 2		495 3	747 10	
273 2	1,2,3	533 3	795 10	

[†] For E(level) ≥ 547 keV, reasonable uncertainties are 5-10 keV (1969La11). The evaluators assign 10 keV in all instances.

[‡] Based on comparison between measured and calculated $\sigma(\theta)$ (1969La11).

[#] Complex.

[@] Unresolved doublet, dominated by an L=3 component.