

⁸⁰Se(p,p),(p,n) IAR 1968Ba23,1968Zi03

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia		NDS 199,271 (2025)	1-Sep-2024

1968Ba23: (p,p); 97.8% ⁸⁰Se target, silicon surface-barrier detectors, $\theta=90^\circ$, 125° , 150° , overall resolution 35 keV.
1968Ba23: (p,n); n detected with ³He-filled proportional counter in paraffin, $\theta=90^\circ$.
1968Zi03: (p,n); E(p)=3.6-5.7 MeV, enriched target, ³He-filled proportional counter.
 Other measurements: **1967Co04**, **1978KaZW** ((p,n), E(p)=5.4 MeV).

⁸¹Br Levels

E(level) [†]	J ^π [#]	Γ _{tot} [@]	L ^b	S ^c	Comments
11286 10	1/2 ⁻	19 keV 3	1	0.093	Analog of ⁸¹ Se g.s. E(level): from E _{lab} =3827 keV 10 (1967Co04). Γ: weighted average of 16 keV 5 (p,n) (1967Co04), 15 keV 5 (p,p) (1968Ba23), and 21 keV 3 (1968Zi03). Γ _p =2.3 keV 1 (1978KaZW).
11392 [‡] 10	7/2 ⁺				Analog of ⁸¹ Se 103 level. E(level): from E _{lab} =3934 keV 10 (1967Co04).
11755 10	3/2 ⁻	18 ^a keV 3			Analog of ⁸¹ Se 468 level. E(level): from E _{lab} =4302 keV 10 (1967Co04). Γ _p =0.80 keV 13 (1978KaZW).
12297 10	5/2 ⁺	18 keV 3	2	0.18	Analog of ⁸¹ Se 1053 level. E(level): from E _{lab} =4851 keV 10 (1968Ba23). Γ: weighted average of 14 keV 5 (p,n) and 14 keV 5 (p,p) (1968Ba23), and 21 keV 3 (1968Zi03). Γ _p =1.3 keV 1 (1978KaZW).
12428 10	1/2 ⁺	48 keV 5	0	0.85	Analog of ⁸¹ Se 1233 level. E(level): from E _{lab} =4984 keV 10 (1968Ba23). J ^π : from L(p,p)=0. Γ: Weighted average of 63 keV 20 (p,n) and 44 keV 5 (p,p) (1968Ba23), and 54 keV 7 (1968Zi03). Γ _p =8.1 keV 9 (1978KaZW).
12509 10	5/2 ⁺	32 keV 4	2	0.41	Analog of ⁸¹ Se 1304 level. E(level): from E _{lab} =5066 keV 10 (1968Ba23). Γ: Weighted average of 34 keV 10 (p,n) and 35 keV 5 (p,p) (1968Ba23), and 30 keV 4 (1968Zi03). Γ _p =3.8 keV 3 (1978KaZW).
12668	3/2 ⁻	24 ^{&} keV 4			Analog of ⁸¹ Se 1406 level. E(level): from E _{lab} =5227 keV (1968Zi03). Γ _p =2.7 keV 10 (1978KaZW).

[†] From E_{lab} (p,n) data of **1968Ba23** if not noted otherwise and masses of ⁸⁰Se=79916521.8 μ a.m.u. and p=1007825.032 μ a.m.u. and S(p)(⁸¹Br)=7506.5 14 (**2021Wa16**). There are more resonances observed in (p,n) than in (p,p) studies. Values from (p,n) and (p,p) differ by 2-10 keV. In **1968Zi03**, no uncertainties are given but the data differ from (p,n) data of **1968Ba23** by only 1-9 keV.

[‡] Reported only in **1968Ba23**.

[#] From ⁸¹Se Adopted Levels, except as noted.

[@] Weighted average of data from **1968Ba23** (both reactions) and **1968Zi03**, unless noted otherwise. For Γ_p, see **1978KaZW**.

[&] From **1968Zi03**; not observed by **1968Ba23**.

^a From **1968Zi03**.

^b From resonance angular distribution in (p,p) (**1968Ba23**).

^c Spectroscopic factor S from (p,p) (**1968Ba23**). See **1968Ba23** for details of derivation of this model parameter sensitive quantity.