

Table 8.8 from (66LA04): ${}^8\text{Be}$ parameters from ${}^4\text{He}(\alpha, \alpha){}^4\text{He}$

E_x (MeV)	J^π	$\Gamma_{\text{c.m.}}$	R (fm)	θ^2	References
g.s.	0^+	$4.5 \pm 3 \text{ eV}^{\text{a}}$	5.7	0.15	(RU56A)
			4.4	[0.40]	(NI58)
		$6.8 \pm 0.6 \text{ eV}$	3.5	1.7	(BA62G)
		$\leq 3.5 \text{ eV}$			(HE56B)
		$6.8 \pm 1.7 \text{ eV}$			(BE65G)
2.9	2^+	2 MeV	5.0	0.7	(RU56A)
3.1			3.5	1.32	(JO60A)
3.18		1.5 MeV	3.5	1.27	(TO63A)
3.13		1.8 MeV	3.5	2.46	(BA62G)
11.8	4^+		4.4	1.3	(NI58)
11.4 ± 0.3					(BR59H)
11.3 ± 0.4					(CE62) ^b
≈ 14					(IG60A)
16.6	2^+				(SH64K)
16.9	2^+				(SH64K)
≈ 28.5	6^+	$\approx 20 \text{ MeV}$	≈ 4.5	≈ 1.8	(DA64E, DA65)
≈ 57	8^+	$\approx 73 \text{ MeV}$	4.5	≈ 4.1	(DA64E, DA65)

^a See also (BA62G).

^b From ${}^6\text{Li}(\alpha, \text{d}){}^8\text{Be}$.