

Table 8.8 from (1966LA04): ^8Be 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	(1956RU41)
			4.4	[0.40]	(1958NI05)
		$6.8 \pm 0.6 \text{ eV}$	3.5	1.7	(1962BA1C)
		$\leq 3.5 \text{ eV}$			(1956HE57)
		$6.8 \pm 1.7 \text{ eV}$			(1966BE05)
2.9	2^+	2 MeV	5.0	0.7	(1956RU41)
3.1			3.5	1.32	(1960JO03)
3.18		1.5 MeV	3.5	1.27	(1963TO02)
3.13		1.8 MeV	3.5	2.46	(1962BA1C)
11.8	4^+		4.4	1.3	(1958NI05)
11.4 ± 0.3					(1959BR71)
11.3 ± 0.4					(1962CE01) ^b
≈ 14					(1960IG02)
16.6	2^+				(1964SH19)
16.9	2^+				(1964SH19)
≈ 28.5	6^+	$\approx 20 \text{ MeV}$	≈ 4.5	≈ 1.8	(1964DA12, 1965DA1A)
≈ 57	8^+	$\approx 73 \text{ MeV}$	4.5	≈ 4.1	(1964DA12, 1965DA1A)

^a See also (1962BA1C).

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