

Table 12.16 from (1980AJ01): States of $^{12}\text{C}(e, e')^{12}\text{C}$ ^a

E_x (MeV)	$J^\pi; T$	Γ_{γ_0} (eV)	Refs.
4.44	$2^+; 0$	$(10.6 \pm 1.1) \times 10^{-3}$ $(11.0 \pm 1.0) \times 10^{-3}$	(1967CR01) (1970ST10)
7.66 ^b	$0^+; 0$	$(6.2 \pm 0.6) \times 10^{-5}$ $(5.9 \pm 0.5) \times 10^{-5}$	(1967CR01) (1970ST10)
9.64	$3^-; 0$	$(3.1 \pm 0.4) \times 10^{-4}$	(1967CR01)
10.84	$1^-; 0$		(1969TO01, 1971NA14)
12.71 ^c	$1^+; 0$	0.35 ± 0.05 (M1)	(1974CE01)
14.08 ^d	$4^+; 0$		(1971NA14)
15.11	$1^+; 1$	37.0 ± 1.1	(1973CH16)
16.11	$2^+; 1$	0.83 ± 0.06 0.35 ± 0.04	(1969GU05) (1978FR03)
16.58	2^- ^g		(1970AN1C, 1971YA03)
17.6 ± 0.2	^g		(1969GU05)
18.1	(1^-)		A, (1978SH14)
18.6 ± 0.1	(3^-) ^g		A
19.3	2^- ^g		A
19.6 ± 0.1	(4^-)		A
20.0 ± 0.1	(2^+)		A
20.6 ± 0.1	(3^+)		A
21.6 ± 0.1	(3^-)		A
22.0 ± 0.1	(1^-) ^g		A
22.7 ± 0.1 ^{e,f}	(1^-)		A
23.8 ± 0.1	(1^-) ^g		A
24.9 ± 0.2			A
25.5	(1^-)		A
25.5	(3^-)		(1971YA03)
26.4 ± 0.3			(1969GU05)
27.8 ± 0.2			(1969GU05)
30.2 ± 0.4			(1969GU05)
32.3 ± 0.3			(1969GU05)

A: References for this state listed in [Table 12.18 \(1975AJ02\)](#).

^a See also [Table 12.20](#) and [reaction 36 in \(1968AJ02\)](#), [Table 12.18 in \(1975AJ02\)](#) and [Table 12.8](#) here. See also [\(1975FA1A\)](#).

^b The matrix element is $5.48 \pm 0.22 \text{ fm}^2$ ([1968ST20](#)), $4.38 \pm 0.2 \text{ fm}^2$ ([1979CR1D](#)) for the E0 decay by π emission to $^{12}\text{C}_{\text{g.s.}}$.

^c $\Gamma_{\text{tot}} = 14.6 \pm 2.6 \text{ eV}$ ([1974CE01](#)).

^d $\Gamma \approx 0.3 \text{ MeV}$ ([1971NA14](#)).

^e The giant dipole resonance has an average $E_x = 23.0 \pm 0.7 \text{ MeV}$ and $\Gamma = 5.7 \pm 0.7 \text{ MeV}$ ([1969GU05](#)).

^f May involve fine structure at $E_x = 22.2, 22.8, 23.4$ and 23.8 MeV .

^g See ([1972AN03](#)). Widths for these states have also been calculated.