

Quantum Numbers

Physics

The four numbers that specify an electron's state.

The four quantum numbers.

Number	Describes	Values
n (principal)	Shell, energy	1, 2, 3 ...
l (angular)	Subshell shape	0 to n-1 (s, p, d, f)
m_l (magnetic)	Orbital orientation	-l to +l
m_s (spin)	Spin direction	+½ or -½

Each orbital holds at most two electrons, with opposite spins. That gives 2, 6, 10 and 14 for s, p, d and f.