

Lanthanide Electron Configuration per Ionization State

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Element Name (Z)	Charge States									
	I	II	III	IV	V	VI	VII	VIII	IX	X
Lanthanum (57)	[Xe]5d ¹ 6s ²	[Xe]5d ²	[Xe]5d ¹	[Cd]5p ⁶	[Cd]5p ⁵	[Cd]5p ⁴	[Cd]5p ³	[Cd]5p ²	[Cd]5p ¹	[Kr]4d ¹ 05s ²
Cerium (58)	[Xe]4f ¹ 5d ¹ 6s ²	[Xe]4f ¹ 5d ²	[Xe]4f ²	[Xe]4f ¹	[Cd]5p ⁶	[Cd]5p ⁵	[Cd]5p ⁴	[Cd]5p ³	[Cd]5p ²	[Cd]5p ¹
Praseodymium (59)	[Xe]4f ³ 6s ²	[Xe]4f ³ 6s ¹	[Xe]4f ³	[Xe]4f ²	[Xe]4f ¹	[Cd]5p ⁶	[Cd]4f ¹ 5p ⁴	[Cd]4f ¹ 5p ³	[Cd]4f ¹ 5p ²	[Cd]4f ²
Neodymium (60)	[Xe]4f ⁴ 6s ²	[Xe]4f ⁴ 6s ¹	[Xe]4f ⁴	[Xe]4f ³	[Xe]4f ²	[Cd]4f ² 5p ⁵	[Cd]4f ² 5p ⁴	[Cd]4f ² 5p ³	[Cd]4f ² 5p ²	[Cd]4f ² 5p ¹
Promethium (61)	[Xe]4f ⁵ 6s ²	[Xe]4f ⁵ 6s ¹	[Xe]4f ⁵	[Xe]4f ⁴	[Xe]4f ³	[Cd]4f ³ 5p ⁵	[Cd]4f ³ 5p ⁴	[Cd]4f ³ 5p ³	[Cd]4f ³ 5p ²	[Cd]4f ³ 5p ¹
Samarium (62)	[Xe]4f ⁶ 6s ²	[Xe]4f ⁶ 6s ¹	[Xe]4f ⁶	[Xe]4f ⁵	[Xe]4f ⁴	[Xe]4f ³	[Cd]4f ⁴ 5p ⁴	[Cd]4f ⁴ 5p ³	[Cd]4f ⁴ 5p ²	[Cd]4f ⁴ 5p ¹
Europium (63)	[Xe]4f ⁷ 6s ²	[Xe]4f ⁷ 6s ¹	[Xe]4f ⁷	[Xe]4f ⁶	[Xe]4f ⁵	[Cd]4f ⁵ 5p ⁵	[Cd]4f ⁵ 5p ⁴	[Cd]4f ⁵ 5p ³	[Cd]4f ⁵ 5p ²	[Cd]4f ⁵ 5p ¹
Gadolinium (64)	[Xe]4f ⁷ 5d ¹ 6s ²	[Xe]4f ⁷ 5d ¹ 6s ¹	[Xe]4f ⁷ 5d ¹	[Xe]4f ⁷	[Xe]4f ⁶	[Cd]4f ⁶ 5p ⁵	[Cd]4f ⁶ 5p ⁴	[Cd]4f ⁶ 5p ³	[Cd]4f ⁶ 5p ²	[Cd]4f ⁶ 5p ²
Terbium (65)	[Xe]4f ⁹ 6s ²	[Xe]4f ⁹ 6s ¹	[Xe]4f ⁹	[Xe]4f ⁸	[Xe]4f ⁷	[Cd]4f ⁷ 5p ⁵	[Cd]4f ⁸ 5p ³	[Cd]4f ⁷ 5p ³	[Cd]4f ⁷ 5p ²	[Cd]4f ⁶ 5p ²
Dysprosium (66)	[Xe]4f ¹⁰ 6s ²	[Xe]4f ¹⁰ 6s ¹	[Xe]4f ¹⁰	[Xe]4f ⁹	[Xe]4f ⁸	[Cd]4f ⁸ 5p ⁵	[Cd]4f ⁸ 5p ⁴	[Cd]4f ⁹ 5p ²	[Cd]4f ⁸ 5p ²	[Cd]4f ⁸ 5p ¹
Holmium (67)	[Xe]4f ¹¹ 6s ²	[Xe]4f ¹¹ 6s ¹	[Xe]4f ¹¹	[Xe]4f ¹⁰	[Xe]4f ⁹	[Cd]4f ⁹ 5p ⁵	[Cd]4f ⁹ 5p ⁴	[Cd]4f ⁹ 5p ³	[Cd]4f ¹⁰ 5p ¹	[Cd]4f ⁹ 5p ¹
Erbium (68)	[Xe]4f ¹² 6s ²	[Xe]4f ¹² 6s ¹	[Xe]4f ¹²	[Xe]4f ¹¹	[Xe]4f ¹⁰	[Cd]4f ¹⁰ 5p ⁵	[Cd]4f ¹⁰ 5p ⁴	[Cd]4f ¹⁰ 5p ³	[Cd]4f ¹⁰ 5p ²	[Cd]4f ¹⁰ 5p ¹
Thulium (69)	[Xe]4f ¹³ 6s ²	[Xe]4f ¹³ 6s ¹	[Xe]4f ¹³	[Xe]4f ¹²	[Xe]4f ¹¹	[Cd]4f ¹¹ 5p ⁵	[Cd]4f ¹¹ 5p ⁴	[Cd]4f ¹¹ 5p ³	[Cd]4f ¹¹ 5p ²	[Cd]4f ¹¹ 5p ¹
Ytterbium (70)	[Xe]4f ¹⁴ 6s ²	[Xe]4f ¹⁴ 6s ¹	[Xe]4f ¹⁴	[Xe]4f ¹³	[Xe]4f ¹²	[Cd]4f ¹² 5p ⁵	[Cd]4f ¹² 5p ⁴	[Cd]4f ¹² 5p ³	[Cd]4f ¹² 5p ²	[Cd]4f ¹² 5p ¹
Lutetium (71)	[Xe]4f ¹⁴ 5d ¹ 6s ²	[Xe]4f ¹⁴ 6s ²	[Xe]4f ¹⁴ 6s ¹	[Xe]4f ¹⁴	[Xe]4f ¹³	[Xe]4f ¹²	[Cd]4f ¹³ 5p ⁴	[Cd]4f ¹³ 5p ³	[Cd]4f ¹³ 5p ²	[Cd]4f ¹² 5p ²

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