

APPENDIX C

GE 1.5 MW SLE WIND TURBINE SPECIFICATIONS



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1.5 MW Wind Turbine Technical Specifications

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Operating Data

	1.5sle	1.5sl	1.5s	1.5se
Rated capacity	1,500 kW	1,500 kW	1,500 kW	1,500 kW
Cut-in wind speed	3.5 m/s	3.5 m/s	4 m/s	4 m/s
Cut-out wind speed 600 s average	25 m/s	20 m/s	WZ II: 22 m/s WZ III, IEC II: 25 m/s	25 m/s
Cut-out wind speed 30 s average	IEC s: 28 m/s	WZ II: 23 m/s	WZ II: 25 m/s WZ III, IEC II: 28 m/s	IEC I: 28 m/s
Cut-out wind speed 3 s average	IEC s: 30 m/s	WZ II: 25 m/s	WZ II: 27 m/s WZ III, IEC II: 30 m/s	IEC I: 30 m/s
Cut-back-in wind speed 300 s average	IEC s: 22 m/s	WZ II: 17 m/s	WZ II: 19 m/s WZ III, IEC II: 22 m/s	IEC I: 22 m/s
Rated wind speed	12 m/s	12 m/s	12 m/s	12 m/s

Rotor

	1.5sle	1.5sl	1.5s	1.5se
Number of rotor blades	3	3	3	3
Rotor diameter	77 m	77 m	70.5 m	70.5 m
Swept area	4,657 m ²	4,657 m ²	3,904 m ²	3,904 m ²
Rotor speed (variable)	10.1 - 20.4 rpm	10.1 - 20.4 rpm	11.1 - 22.2 rpm	11.1 - 22.2 rpm

Tower

	1.5sle	1.5sl	1.5s	1.5se
Hub heights (m)	61.4 ⁺ / 64.7 ⁺ / 80 ⁺ / 85 ⁺	61.4 ⁺ / 64.7 ⁺ / 80 ⁺ / 85 ⁺ / 100 ⁺	64.7 ⁺ / 80 ⁺ / 85 ⁺ / 100 ⁺ m	52.6 ^{***} / 54.7 ^{***} / 64.7 ^{***}

* for WZ II ** for WZ III/IEC II *** for IEC I + for IEC s

Power Control

	1.5sle	1.5sl	1.5s	1.5se
Power control	Active blade pitch control	Active blade pitch control	Active blade pitch control	Active blade pitch control

Operating Limits (outside temperature)

- Cold weather light: -4 to 104 °F (-20 to 40 °C)
- Cold weather extreme: -22 to 104 °F (-30 to 40 °C)/-40 °C to +50 °C survival without operation

Control System

- Programmable logic controller (PLC)

- Remote control and monitoring system

Gearbox

- Three-step planetary spur gear system

Generator

- Doubly-fed three-phase asynchronous generator

Braking System (fail-safe)

- Electromechanical pitch control for each blade (three self-contained systems)
- Hydraulic parking brake

Yaw System

- Electromechanical driven with wind direction sensor and automatic cable unwind

Converter

- Pulse-width modulated IGBT frequency converter

Tower design

- Multi-coated, conical tubular steel tower with safety ladder to the nacelle
- Load lifting system, load-bearing capacity more than 441 lbs (200 kg)
- Service platform for 100 m hub height (service lift optional)

Noise Reduction

- Impact noise insulation of the gearbox and generator
- Sound reduced gearbox
- Noise reduced nacelle
- Rotor blades with minimized noise level

Lightning Protection System

- Lightning receptors installed on blade tips
- Surge protection in electrical components

Note: subject to technical alterations, errors and omissions

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