EW50 Specifications

1. SYSTEM

Type	3 ϕ Grid Connected
Configuration	Horizontal Axis
Rotor Diameter	15 m (49.2 ft)
Centerline Hub Ht.	31.1 m (102 ft)

2. PERFORMANCE PARAMETERS

Rated Electrical Power	50 kW @11.3 m/s (25.3 mph)
Wind Speed Ratings	
Cut-in	4.0 m/s (8.9 mph)
Shut-down (high wind)	22.4 m/s (50 mph)
Design Speed	59.5 m/s (133 mph)
Average Annual Output at Sea Level	Class 2 115,000kWh Class 3 149,000kWh Class 4 177,000kWh

3. ROTOR

Type of Hub	Fixed Pitch
Rotor Diameter	15 m (49.2 ft)
Swept Area	177 m2 (1902 ft2)
Number of Blades	3
Rotor Solidity	0.077
Rotor Speed @ Nameplate Capacity	65 rpm
Location Relative to Tower	Downwind
Cone Angle	6^{o}
Tilt Angle	0^{o}
Rotor Tip Speed	51 m/s (114 mph) @ 60 Hz
Design Tip Speed Ratio	6.1

4. BLADE

Length	7.2 m (23.7 ft)
Material	Epoxy /glass fiber
Blade Weight	150 kg (330 lbs) approximate

5. GENERATOR

Type	3 phase/4 pole asynchronous
Frequency	60 Hz
Voltage	3 phase @ 50/60 Hz, 415-600 VAC
kW @ Rated Wind Speed	50 kW
kW @ Peak Continuous	66 kW
Insulation	Class F
Enclosure	Totally Enclosed Air Over
Options	Arctic low temp shafting - 40C

6. TRANSMISSION

Type	Planetary
Housing	Ductile Iron
Ratio (rotor to generator sp)	1 to 28.25 (60 Hz)
Rating, output horse power	88
Lubrication	Synthetic gear oil/non-toxic
Heater (option)	Arctic version, electric

7. YAW SYSTEM

Normal	Free, Passive
Electrical	Twist Cable

8. TOWER

Type	Free standing monopole or galvanized lattice
Lattice Tower Heights	80', 100', 120'
Monopole Tower Heights	72', 100', 120'
Monopole Options	Noise Reducing Fairing, Ladder, Finish

9. FOUNDATION

Type	Monolithic Slab or Custom

10. CONTROL SYSTEM

Type	Microprocessor based
Communications	Cellular or Internet/Ethernet connection to central computer for energy monitor and maintenance dispatch
Enclosures	NEMA 1, NEMA 4 (optional)
Soft Start	Optional

11. ROTOR SPEED CONTROL

Running	Passive stall regulation
Start-up	Aerodynamic
Shut-down	Aerodynamic tip brake Parking brake for servicing

12. BRAKE SYSTEM CONTROL

Fail-safe aerodynamic and parking brakes

13. APPROXIMATE SYSTEM DESIGN WEIGHTS

100' Lattice Tower	3,210 kg (7,080 lb)
100' Monopole Tower	7,281 kg (16,051 lb)
Rotor & Drive Train	2,420 kg (5,340 lb)

14. DESIGN LIFE	30 Years
15. DESIGN STANDARDS	IEEE 1547 compliant, CE certified, UL listed
16. DOCUMENTATION	Installation Guide and Operation & Maintenance Manual
17. SCHEDULED MAINTENANCE	Semi-annual

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