

Entegrity EW50 Wind Turbine

SYSTEM

Type	3 Φ Grid Connected
Configuration	Horizontal Axis
Rotor Diameter	15 m (49.2 ft)
Centerline Hub Height	25 m (82 ft)

PERFORMANCE PARAMETERS

Rated Electrical Power	50 kW @11.3 m/s (25.3 mph)
Wind Speed Ratings:	
cut-in	4.6 m/s (10.2 mph)
shut-down (high wind)	22.4 m/s (50 mph)
design speed	59.5 m/s (133 mph)
Calculated Annual Output @ 100 % availability	5.4 m/s (12 mph) 85,000 kWh 6.7 m/s (15 mph) 145,000kWh 8.0 m/s (18 mph) 199,000 kWh

ROTOR

Type of Hub	Fixed Pitch
Rotor Diameter	15 m (49.2 ft)
Swept Area	177 m ² (1902 ft ²)
Number of Blades	3
Rotor Solidity	0.077
Rotor Speed @ rated wind speed	65 rpm
Location Relative to Tower	Downwind
Cone Angle	6°
Tilt Angle	0°
Rotor Tip Speed	50 m/s (111 mph) @ 60 Hz
Design Tip Speed	6.1

BLADE

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

GENERATOR

Type	3 phase/4 pole asynchronous
Frequency	50 Hz
Voltage	3 phase @ 50 Hz, 400-600 VAC
kW @ Rated Wind Speed	50 kW
kW @ Peak Continuous	55 kW
Insulation	Class F
Enclosure	Totally Enclosed Air Over
Options	Arctic low temp shafting -40°C

TRANSMISSION

Type	Planetary
Housing	Ductile iron
Ratio (rotor to gen. speed)	1 to 28.25 (60 Hz)
Rating, output horse power	88
Lubrication	Synthetic gear oil/non toxic
Heater (option)	Arctic version, electric

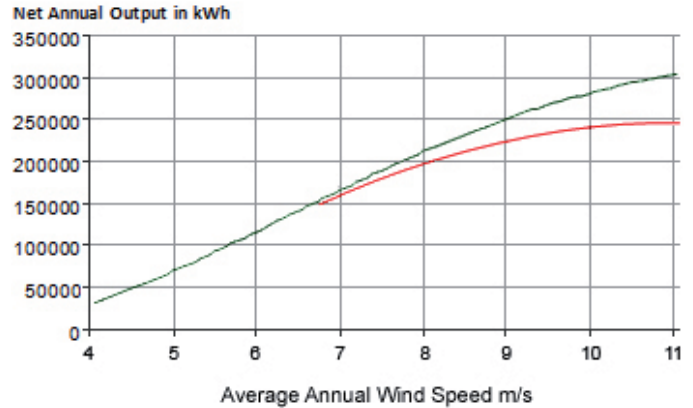
YAW SYSTEM

Normal	Free, passive
Optional	Yaw damp
Electrical	Twist cable

TOWER

Type	Free standing galvanized bolted lattice or Monopole
Tower Height	30 m (100 ft)
Options	24.4 m (80ft) Monopole (various heights) Tilt down

EW50 Estimated Annual Energy Output 60 Hz and 50 Hz curves



FOUNDATION

Type	Concrete pads, piers or special
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CONTROL SYSTEM

Type	Microprocessor based
Communications	Ethernet/Internet link to for energy monitoring and maintenance dispatch
Enclosures	NEMA 1, NEMA 4 (optional)
Soft Start	Optional

BRAKE SYSTEM CONTROL

Fail-safe aerodynamic and parking brakes.

ROTOR SPEED CONTROL

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

APPROXIMATE SYSTEM DESIGN WEIGHTS

Tower Lattice	3,210 kg (7,080 lb)
Tower Monopole	4535 kg (10,000 lb)
Rotor & Drive train	2,420 kg (5,340 lb)

DESIGN LIFE: 30 Years

DESIGN STANDARDS: Applicable Standards, AWEA, and IEC

DOCUMENTATION: Installation Guide and Operation & Maintenance Manual

SCHEDULED MAINTENANCE: Semi-annual or after severe events

For more information on the EW50 Wind Turbine please call 01565 757829 or email: enquiries@perpetualenergy.co.uk