

# EW15 Specifications 50 kW, 50 or 60 Hz

## **SYSTEM**

Type	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) 87,000 kWh
	6.7 m/s (15 mph) 153,000 kWh
	8.0 m/s (18 mph) 215,000 kWh

## **ROTOR**

Type of Hub	Fixed Pitch
Rotor Diameter	15 m (49.2 ft)
Swept Area	177 m <sup>2</sup> (1902 ft <sup>2</sup> )
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	51 m/s (114 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	(Hz) 60 Hz
Voltage	3 phase @ 60 Hz, 400-600 V
kW @ Rated Wind Speed	50 kW
kW @ Peak Continuous	66 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
Tower Height	24.4 m (80 ft)
Options	30.5 m (100 ft),
Tilt down 24.4 m (80 ft)	

## **FOUNDATION**

Type	Concrete pad, pier or special
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## **CONTROL SYSTEM**

Type	PLC based
Communications	Serial link to central computer for energy monitor and maintenance dispatch (optional)
Enclosures	NEMA 1, NEMA 4 (optional)
Soft Start	Optional

## **ROTOR SPEED CONTROL**

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

## **BRAKE SYSTEM CONTROL**

Fail-safe aerodynamic, electrodynamic, and parking brakes.

## **APPROXIMATE SYSTEM DESIGN WEIGHTS**

Tower	3,210 kg (7,080 lb)
Rotor & Drive train	2,420 kg (5,340 lb)
Weight on Foundation	5,630 kg (12,420 lb)

**DESIGN LIFE:** 30 Years

**DESIGN STANDARDS:** Applicable Standards, AWEA, EIA and IEC

**DOCUMENTATION:** Installation Guide and Operation & Maintenance Manual

**SCHEDULED MAINTENANCE:** Semi-annual or after severe events.

