

1.3 kW Wind Turbine System Specification Sheet

Wind is a naturally occurring and abundant resource and is one of the cleanest ways to produce electricity. Very little processing needs to be done to convert it into clean, free energy. Operation of our wind turbines produces no pollution with no emissions, excessive noise or waste heat by-products. Wind can be harvested with minimal impact on the environment, a very important factor in meeting our increasing energy needs.

Synergy

- Solar
- Biomass
- Diesel Generator
- Hydroelectric
- Geothermal

Applications

- Commercial and Industrial
- Residential and Resort
- Agricultural
- Remote Communities
- Off-Grid Power
- Institutional and Public

Key Benefits

- Energy cost savings from wind generated power
- No scheduled maintenance
- Designed to reliably operate in harsh cold & hot climates
- Operation creates virtually no environmental impact
- Cost-effective and financially viable
- Warranty

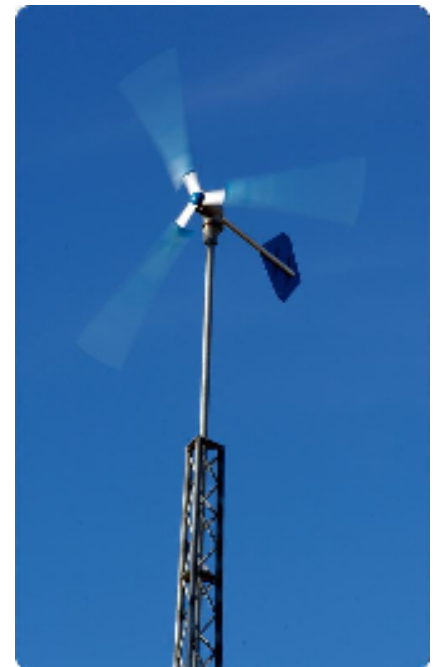
Turbine

Rated Power Output	1.3 kW
Energy Production*	200 kWh/month
Type	3 blades, horizontal axis
Generator	Gearless, brushless, permanent magnet
Swept Area	6.8 m ²
Blade Diameter	2.9 m
Blade Material	Fibreglass reinforced plastic
Total Turbine Mass	39 kg
Voltage/Phase @ Rated Power	125 Vac peak
Current/Phase @ Rated Power	3.6 Aac peak
Generator NEMA Rating	Class B, 2 HP
Life Expectancy	> 25 years

*5.0 m/s (18 km/h) average wind speed, Rayleigh Distribution, Sea Level elevation

Operational Data

Rated Wind Speed	11 m/s (39 km/h)
Start-up Wind Speed	3 m/s (11 km/h)
Furling Start-up Wind Speed	10 m/s (36 km/h)
Furling Method	Spring/hinge-based tilt-up
RPM at Rated Power	800 RPM
Survival Wind Speed	45 m/s (162 km/h)
Survival RPM	1,400 RPM



Conversion Table

m/s	km/h	mph
4	14	9
6	22	13
8	29	18
10	36	22
12	43	27
18	65	40
25	90	56
45	162	101

A Revolution in Wind Energy

Inverter

Type	Grid-tie
Input Power Rating	1350 W
Electrical Input	Three-phase
Rated Input Voltage	125 Vac peak/phase
Rated Input Current	3.6 Aac peak/phase
Output Voltage	120 Vrms True Sine Wave
Max Output Current	10 Arms True Sine Wave
Power Factor at Output	>0.99
Certifications	CSA 22.2 #107.1 and UL 1741
Enclosure Weight	9 kg
Size	300 mm x 300 mm x 100 mm

System Power Curve

Wind Speed (m/s)	Energy Out (kWh): Grid-tie	Power Out (W): Battery Charger
4	58	74
5	127	155
6	241	279
7	429	472
8	673	713
9	914	965
10	1200	1289
11	1200	1500
12	1200	1500
13	1200	1500

Tower

Tower Type	Engineered free-standing steel truss
Installation Method	Gin pole; no crane required
Foundation	3 m ³ reinforced concrete
Number of Sections	4 x 3 m (10') sections + 2m mast
Tower Height to Nacelle	14.5 m (48')
Tower Mass	165 kg
Max Lateral Load at Mast	2200 N (500 lbs)
Max Vertical Load at Mast	440 N (100 lbs)
Survival Wind Speed*	45 m/s (162 km/h)

*With 2200 N (500 lbs) loading at mast tip

Annual Energy Production

Wind Speed (m/s)	kWh/year: Grid-tie	kWh/year: Battery Charger*
4	1221	1393
4.5	1781	2016
5	2443	2813
5.5	2766	3365
6	3331	4205
6.5	3610	4859
7	3877	5413
7.5	4047	6068

* Does not include efficiency of off-grid inverter



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