



3.5 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

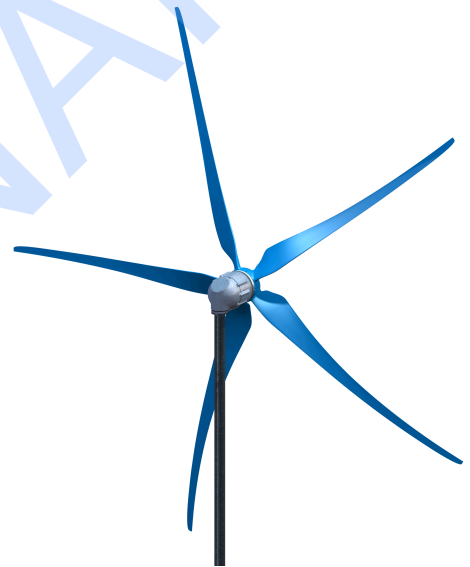
- Commercial and Industrial
- Residential and Resort
- Agricultural
- Remote Communities
- Off-Grid Power
- Institutional and Public

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
- 5-Year Warranty

Turbine

Rated Power Output	3.5 kW
Energy Production*	500 kWh/month
Type	5 blades, downwind
Generator	Gearless, brushless, permanent magnet
Swept Area	12.6 m ²
Blade Diameter	4 m
Blade Material	Fibreglass reinforced plastic
Total Turbine Mass	68 kg
Voltage/Phase @ Rated Power	150 Vac peak
Current/Phase @ Rated Power	8 Aac peak
Generator NEMA Rating	Class B, 5 HP
Life Expectancy	> 20 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	2.8 m/s (11 km/h)
Braking Wind Speed	22 m/s (80 km/h)
Furling Method	EM Brake
RPM at Rated Power	350 RPM
Survival Wind Speed	50 m/s (180 km/h)
Survival RPM	1,000 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	Three 1.3kW Inverters
Electrical Input	Three-phase
Rated Input Voltage	150 Vac peak/phase
Rated Input Current	8 Aac peak/phase
Output Voltage	120 Vrms True Sine Wave
Max Output Current	30 Arms True Sine Wave (10A per inverter)
Power Factor at Output	>0.99
Certifications	CSA 22.2 #107.1 and UL 1741
Enclosure Weight	8 kg per unit
Size	300 mm x 300 mm x 100 mm

System Power Curve

Wind Speed (m/s)	Power Out (W): Grid-tie
3	51
4	134
5	297
6	563
7	1000
8	1569
9	2233
10	3064
11	3500
12	3500

Tower

Tower Type	Engineered free-standing steel monopole
Installation Method	Gin pole; no crane required
Foundation	3 m ³ concrete (varies with region standard)
Number of Sections	4 x 3.7 m (12') sections
Tower Height to Nacelle	14.5 m (48')
Tower Mass	410 kg (900 lbs)
Max Lateral Load at Mast	5000 N (1120 lbs)
Max Vertical Load at Mast	880 N (200 lbs)
Survival Wind Speed*	50 m/s (180 km/h)
*With 5000 N (1120 lbs) loading at mast tip	

Annual Energy Production

Wind Speed (m/s)	kWh/year: Grid-tie
4	2992
4.5	4390
5	6220
5.5	7498
6	9467
6.5	10,994
7	12,292
7.5	13,837
* Does not include efficiency of off-grid inverter	



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