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 (135 ft^2)
Blade Length	2 m (77 5/8”)
Blade Material	Fibreglass reinforced plastic
Total Turbine Mass	68 kg (149 lb)
Voltage/Phase @ Rated Power	120 Vac peak
Current/Phase @ Rated Power	12 Aac peak
Generator NEMA Rating	Class F, 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 (40 km/h or 24.4 mph)
Start-up Wind Speed	3.2 m/s (12 km/h or 7.5 mph)
No-Export Shutdown Wind Speed	20 m/s (72 km/h or 45 mph)
Furling Method	Active Braking System (ABS)
RPM at Rated Power	280 RPM
Survival Wind Speed	50 m/s (180 km/h or 112 mph)
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
16	57	36
18	65	41
45	162	101

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Inverter

Type	Raum4000i Grid-tie
Input Power Rating	4kW
Electrical Input	Three-phase
Max Operating Input Voltage	330 Vrms/L-L
Max Operating Input Current	15 Arms
Output Voltage (Configurable)	208/240 Vrms
Max Output Current	20 Arms
Power Factor at Output	>0.99
Certifications	CSA 22.2 #107.1 and UL 1741
Enclosure Weight	19.4 kg (43 lb) per unit
Size	510 mm x 300 mm x 150 mm

Tower

Tower Type	Engineered free-standing steel monopole
Install Method	Tilt Base with Gin Pole
Foundation	3 m^3 (4 cu yd) concrete (varies by region)
# of Sections	4 x 3.7 m (12') sections
Tower Height to Nacelle	14.6 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*	180 km/h (112 mph)

*With 1850 N (416 lbs) loading at mast tip

Instantaneous System Power Curve

Wind Speed (m/s) [mph]	Power Out (W): Grid-tie
3 [6.7]	56
4 [8.9]	141
5 [11.2]	290
6 [13.4]	523
7 [15.7]	862
8 [17.9]	1327
9 [20.1]	1943
10 [22.4]	2730
11 [24.6]	3500
12 [26.8]	4000
13 [29.0]	4000
14 [31.3]	540
15 [33.6]	620
16 [35.8]	700
17 [38.1]	800
18 [40.3]	900
19 [42.5]	1000
20 [44.8]	1100
21 [47.0]	0

Annual Energy Production

Ave Wind Speed (m/s) [mph]	kWh/year: Grid-tie
3.0 [6.9]	1,035
3.5 [7.9]	1,716
4.0 [8.9]	2,731
4.5 [10.1]	3,985
5.0 [11.2]	5,800
5.5 [12.3]	6,905
6.0 [13.4]	8,444
6.5 [14.5]	9,659

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