



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 | 81 kg (178 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 | 25 m/s (92 km/h or 56 mph) |
| Furling Method | Active Braking System (ABS) |
| RPM at Rated Power | 315 RPM |
| Survival Wind Speed | 50 m/s (180 km/h or 112 mph) |
| Survival RPM | 1,000 RPM |



A Revolution in Wind Energy

Inverter

| | |
|------------------------|-----------------------------|
| Type | Raum4000i Grid-tie |
| Input Power Rating | 4kW |
| Electrical Input | Three-phase |
| Max Input Voltage | 190 Vrms/phase |
| Max Input Current | 20 Arms/phase |
| Output Voltage | 240 Vrms True Sine Wave |
| Max Output Current | 17 Arms True Sine Wave |
| 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 |

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] | 2732 |
| 11 [24.6] | 3719 |
| 12 [26.8] | 4000 |
| 13 [29.0] | 4000 |
| 14 [31.3] | 539 |
| 15 [33.6] | 619 |
| 16 [35.8] | 706 |
| 17 [38.1] | 798 |
| 18 [40.3] | 896 |
| 19 [42.5] | 999 |
| 20 [44.8] | 1109 |
| 21 [47.0] | 1224 |
| 22 [49.3] | 1344 |
| 23 [51.5] | 1471 |
| 24 [53.7] | 1603 |
| 25 [56.0] | 0 |

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 | 14.2 m (47') |
| 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

Annual Energy Production

| Ave Wind Speed (m/s) [mph] | kWh/year: Grid-tie |
|-------------------------------|-----------------------|
| 4 [8.9] | 2,731 |
| 4.5 [10.1] | 4,006 |
| 5 [11.2] | 5,800 |
| 5.5 [12.3] | 6,954 |
| 6 [13.4] | 8,522 |
| 6.5 [14.5] | 9,751 |
| 7 [15.7] | 10,730 |



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