



# 1.5 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	Applications	Key Benefits
<ul style="list-style-type: none"> <li>- Solar</li> <li>- Biomass</li> <li>- Diesel Generator</li> <li>- Hydroelectric</li> <li>- Geothermal</li> </ul>	<ul style="list-style-type: none"> <li>- Commercial and Industrial</li> <li>- Residential and Resort</li> <li>- Agricultural</li> <li>- Remote Communities</li> <li>- Off-Grid Power</li> <li>- Institutional and Public</li> </ul>	<ul style="list-style-type: none"> <li>- Energy cost savings from wind generated power</li> <li>- No scheduled maintenance</li> <li>- Designed to reliably operate in harsh cold &amp; hot climates</li> <li>- Operation creates virtually no environmental impact</li> <li>- Cost-effective and financially viable</li> <li>- 5-Year Warranty</li> </ul>

Turbine	
Rated Power Output	1.5 kW
Energy Production*	230 kWh/month
Type	3 blades, horizontal axis
Generator	Gearless, brushless, permanent magnet
Swept Area	6.8 m <sup>2</sup>
Blade Diameter	2.9 m
Blade Material	Fibreglass reinforced plastic
Total Turbine Mass	39 kg
Voltage/Phase @ Rated Power	143 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	3.3 m/s (12 km/h)
Furling Start-up Wind Speed	10 m/s (36 km/h)
Furling Method	Spring/ hinge-based tilt-up
Brake Method	Active Brake System @ 15m/s
RPM at Rated Power	800 RPM
Survival Wind Speed	50 m/s (180 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	Raum1500i Grid-tie
Input Power Rating	1500 W
Electrical Input	Three-phase
Max Input Voltage	170 Vrms/phase
Max Input Current	7.8 Arms/phase
Output Voltage	240 Vrms True Sine Wave
Max Output Current	6 Arms True Sine Wave
Power Factor at Output	>0.99
Certifications	CSA 22.2 #107.1 and UL 1741
Enclosure Weight	11 kg per unit
Size	510 mm x 300 mm x 150 mm

## System Power Curve

Wind Speed (m/s)	Power Out (W): Grid-tie	Power Out (W): Battery Charger
4	65	74
5	142	155
6	269	279
7	479	472
8	752	713
9	1022	965
10	1280	1289
11	1400	1500
12	1400	1500
13	1400	1500

## Tower

Tower Type	Engineered free-standing steel truss
Installation Method	Gin pole; no crane required
Foundation	3 m <sup>3</sup> concrete (varies with region standard)
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	1360	1393
4.5	1990	2016
5	2779	2763
5.5	3324	3365
6	4143	4205
6.5	4779	4859
7	5341	5413
7.5	5980	6068

\* Does not include efficiency of off-grid inverter



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## Regional Raum Certified Dealer

