

# *Four Seasons Windpower*

We're Working For You, Your Economy, and Your Energy Security!

## ZZ-3KW Specifications (3KW)



- **Number of blades:** 3
- **Material of blades:** FRP
- **Rotor Diameter (m):** 4.5
- **Cut-in wind speed:** 3m/s
- **Cut-out wind speed:** 25m/s
- **Rated wind speed:** 10m/s
- **Rated speed (RPM):** 360
- **Survival wind speed:** 50m/s
- **Wind energy ratio (%):** 0.41
- **Generator:** Permanent magnetic generator
- **Generator rated power (W):** 3,000
- **Maximum output power (W):** 3,500
- **Output voltage (VDC):** 24/48/120
- **Maximum current (A):** 21.4
- **Type of turbine:** Direction sought through use of tail vane and speed controlled with auto-furling
- **Over speed protection:** automatic
- **Output protection:** Auto-Furl
- **Charging control:** Automatic
- **Net weight, no tower (kg):** 126

### **Working Principle and Features:**

Wind energy is used as kinetic energy to provide low speed rotation of a permanent magnet generator to produce alternating current which is then converted to direct current by a controlled constant voltage rectification system. The resulting voltage being stored in a battery(s), or fed directly into an SMA Windy Boy grid-tie inverter. The direct current from the battery(s), if the system is set-up for off-

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grid or grid-tie with battery backup, is then converted to alternating current by an inverter. The resulting controlled and stabilized alternating current being used to power the load. This is the general principle for battery storage type or direct grid-tied systems. The products combine unique and innovative design with high reliability. The products innovative design has been awarded multiple Technical and Application Patents. This has resulted in the market leading position in wind to electrical energy conversion for H.A.W.T. technical design and efficiency. One key design feature is the very low wind start-up speed. This results in increased efficiency when compared to other comparably rated H.A.W.T. wind turbine systems.

## Ranges of Application

These products may be used in any area that possesses even a fair wind regime and may have little or no electrical grid connection. Such locations may be: islands, desert, sparsely inhabited areas, military defense, microwave/ communication stations, forest observation posts, oil pipeline delivery stations, gas and oil wells, mines, residential dwellings, highway lighting, etc. Rural and urban applications may include, community squares and recreational areas, parks, landscape and scenic locations, resorts, and other ecological areas. Our conclusion: The utilization of wind energy at no on-going cost, significantly reduces the world wide environmental impact of fossil fuel usage while depositing money... back into the grid-tied customer's pocket, and providing a viable resource to those customer's located off-grid.

## 3KW SYSTEM PRICING

### »ZZ-3KW WIND POWER SYSTEM

3KW Wind Turbine (Generator, Blades, and Rear Tail)	\$3,320
I0G Controller Includes Dump Load (48, 60, 120, 240VDC Output)	\$1,362
12M Guy Wires Tower (Galvanized)	\$2,214
Utility-Connect SMA Windy Boy 3800	\$2,935
Utility-Connect System Total:	\$9,831
Off-Grid Sine Wave Inverter (optional):	\$1,600

## Power Curve



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- Prices above do not include shipping. Products are shipped direct from manufacturing.
- Email Four Seasons Windpower for an exact shipping rate to your nearest port / freight terminal, anywhere worldwide!
- Products typically ship in 3-5 days from placing your order and will arrive in approximately 30-45 days.
- 70% non-refundable T/T (Wire transfer), 30% balance due FSW prior to shipping. (Payment Terms: 70%, 5-10 days the balance of 30% upon surrender of shipping documents)
- All products are new.
- Warranty Period: 2 years from the date of purchase for the generator, tower, and charge controller. Windy Boy grid-tie inverters are backed by a 5-year manufacturer's warranty. Off grid inverters are backed by a 2-year warranty.
- The above stated warranty does not cover improper installation or Acts of Nature.

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