Energy Management System

The SmartBox Control System incorporates a proprietary control system that is specifically designed to capture the most efficient power from wind at its unpredictable patterns and dynamics. It functions as a sophisticated energy management system and also provides a simple and seamless interconnection to the grid. The WindTronics Wind Turbine and the SmartBox offers cutting-edge turbine technology to the individual, enabling each to harness, utilize and manage the energy at their local wind zone. The SmartBox is the control system that consists of a charge controller and a non-grid tie 1.5 kW inverter. Included within the charge controller is an automatic AC transfer switch that will automatically switch between your AC grid and power generated via the turbine.

The WindTronics Wind Turbine works seamlessly with grid tie or DC Charge controllers. Refer to items A through D on prior page under Connection Options.

SMART BOX

SmartBox Control System incorporates:

- Optimal Power Transfer Controller
- True Sine Wave Inverter
- Battery Power Management System
- Wind Direction & Speed Measurement Control System

Utility Grid Tie System

The WindTronics Wind Turbine can also be configured with the Aurora® grid tie inverter for simple connectivity to any utility or building (F.I.T. or net metering).

Aurora® inverters operate at 96% efficiency and comply with standards set for grid tied operation, safety, and electromagnetic compatibility including: UL1741/IEEE1547 & CSA-C22.2 N.107.1-01, VDEO126, CEI 11-20, DK5940, CEI64-8, IEC 61683, IEC 61727, EN50081, EN61000, CE certification, El Real Decreto RD1663/2000 de España.

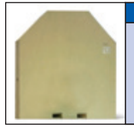
A Wind Turbine Like No Other In...

- Residential
- Commercial
- Agricultural
- Remote
- Towers
- Energy Recovery
- Education
- Design
- Size
- Startup speed
- Ease of Permitting
- Efficiency
- Quiet Operation

BTPS Model Specifications		
Enclosed Blade Tip Power System (BTPS)	Wide Wind Acceptance – Auto Directional	Connects to building, utility or battery charge controller
BTPS Permanent Magnet Electric Generator	Cut in wind speed 2 mph (.89 m/s)	Optional Controllers included: Aurora®, OutBack™, SmartBox or DC Charger
ETL Listed, Conforming to UL 1741 - CAN/CSA C22.2 No. 107.1	Acoustic Noise Emissions < 35dB at 10 feet (3.1 m)	
CE Mark	Designed to withstand winds up to 140 mph (62.6 m/s)	5 Year Limited Warranty
Blades – Glass Filled Nylon Composite	Shut down wind speed 38 mph (17.0 m/s)	Annual CO2 Displacement 2.2 Tons
Tip to Tip Blade Dimension 5.7' (1.7 m)	Electromagnetic Braking System	

Description	Product Dimensions					
	Part Number	GTIN / UPC (Sellable Unit)	Weight (All Weights in kgs)		Dimensions (All in Meters)	
			Unit	Shipping	Unit	Shipping
BTPS6500 Wind Turbine	BTPS6500	824309100014	110	182	2.0 W x 2.2 H x .5 D	2.2 W x 2.3 H x .5 D
SmartBox™ 120V/50Hz NGT (Non-Grid Tie)	SB650012050NGT	824309200127	26.4	30	.51 L x .52 W x .23 D	.64 L x .64 W x .6 D
SmartBox™ 120V/60Hz NGT (Non-Grid Tie)	SB650012060NGT	824309200028	26.4	30	.51 L x .52 W x .23 D	.64 L x .64 W x .6 D
SmartBox™ 230V/50Hz NGT (Non-Grid Tie)	SB650023050NGT	824309200073	26.4	30	.51 L x .52 W x .23 D	.64 L x .64 W x .6 D
SmartBox™ 230V/60Hz NGT (Non-Grid Tie)	SB650023060NGT	824309200097	26.4	30	.51 L x .52 W x .23 D	.64 L x .64 W x .6 D
Aurora® Inverter 3.0kW (Grid Tie)	POGT6500***	824309500***	18	20.4	.72 L x .4 W x .4 H	.63 L x .33 W x .21 H
OutBack™ Inverter 3000W 120/60Hz w/ Battery Backup (Grid Tie)	OBGTFX3048	824309400022	28.2	31.3	.41 L x .21 W x .36 H	.56 L x .33 W x .56 H
DC Charge Controller 12/24/48V	DCCC6500	82430940015	6	6.8	.38 L x .31 W x .17 H	.46 L x .32 W x .32 H
QuadPod™ Fixed Mount	MQP6500	824309300049	75	77.2	1.83 L x 1.17 W x .31 H	1.88 L x 1.22 W x .31 H
QuadPod™ Ballast Attachment	MQP6500-B	824309300056	170	170	1.17 L x 1.14 W x .15 H	1.17 L x 1.14 W x .15 H
Pole Coupler	MPT6500	824309******	45.4	47.6	.79 L x .84 W x .48 H	.81 L x .86 W x .51 H

**For 230 VAC/50 Hz Grid Tie applications, use WindTronics Wind Turbine (BTPS6500), DC Charge Controller (DCCC6500) which can be connected to the utility protocol inverter specified in each country.
***Part Number for Aurora Grid Tie Inverter will vary depending on final country of installation.

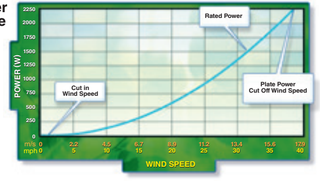


Turbine Package

Dimension in meters:
2.2 W
2.3 H
0.5 Deep

Gross weight:
182 kgs

Power Curve



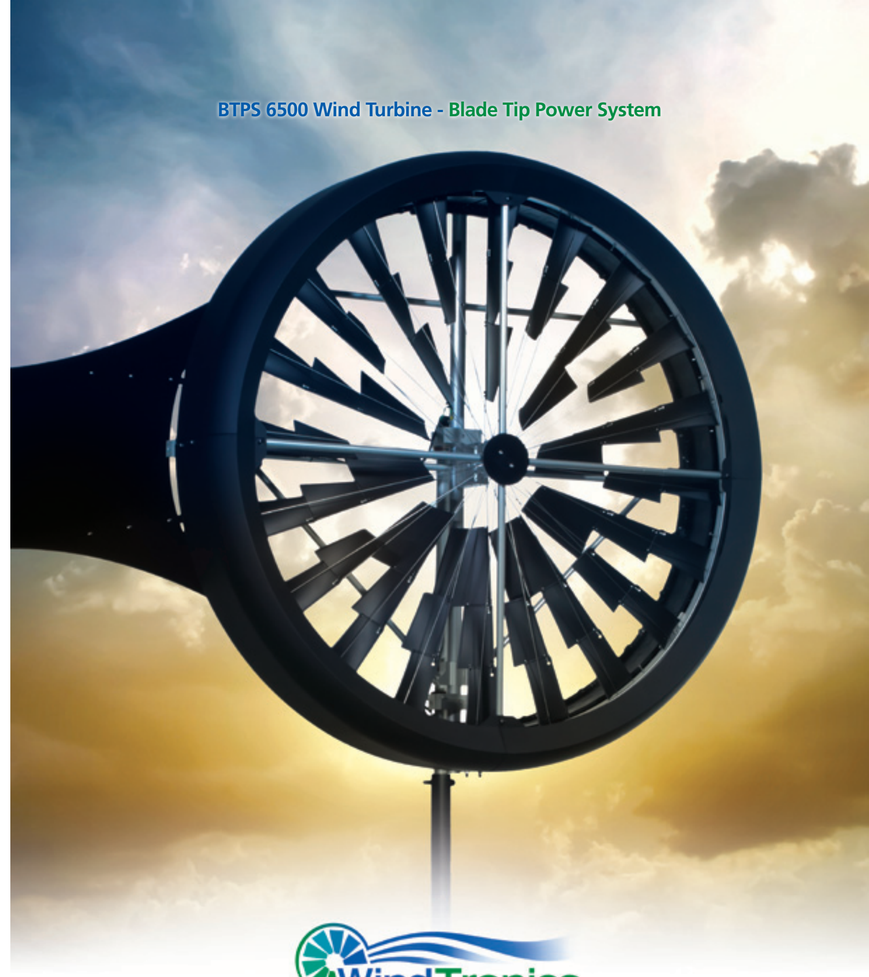
Power Output

- 1,500 Watts at 31 mph
- 2,200 Watts at 38 mph Peak Rating

Energy Output

- 2752 kWh/yr maximum output constant wind (Class 4 DOE)

WindTronics
www.windtronics.co.uk



WindTronics

A wind turbine like no other. Always turning.

Today's wind energy... like no other.

Introducing a breakthrough wind energy system for home and business

The WindTronics Wind Turbine is a gearless wind turbine that measures just 6 feet (1.8 m) in diameter, weighs 241 lbs (110 kgs) and produces on average 1500 kWh per year depending on height and location. The WindTronics Wind Turbine's BTPS perimeter power system and unique design of multi-stage blades allows the system to react quickly to changes in wind speed. This ensures that the maximum wind energy is captured without the typical noise and vibration associated with traditional wind turbines. The WindTronics Wind Turbine has an increased operating span over traditional turbines with a start-up speed as low as 0.5 mph (0.2 m/s), with an auto shut off at 38 mph (17.0 m/s), traditional gearbox turbines require minimum wind speeds of 7.5 mph (3.5 m/s) to cut in and start generating power. The WindTronics Wind Turbine is designed to be installed by a licensed electrician wherever energy is consumed, turning homes and businesses from points of total consumption to distributed energy sources, in a cost effective and efficient manner.

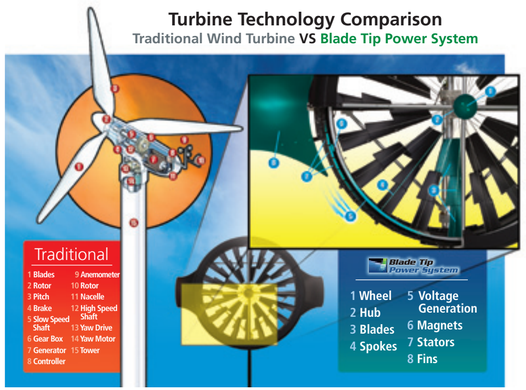
Blade Tip Power System

Gearless Blade Tip Power System – the future of wind power

The innovative Blade Tip Power System (BTPS) is the patented technology created by WindTronics™. The WindTronics Wind Turbine utilizes a system of magnets and stators surrounding its outer ring capturing power at the blade tips where speed is greatest, practically eliminating mechanical resistance and drag. Rather than forcing the available wind to turn a generator, the perimeter power system becomes the generator by swiftly passing the blade tip magnets through the copper coil banks mounted onto the enclosed perimeter frame. The Blade Tip Power System addresses past constraints such as size, noise, vibration and output. The enclosed perimeter shrouds the system and is more distinguishable to wildlife. WindTronics' proprietary systems are breaking traditional technological barriers across multiple markets, for homes and businesses, for both energy generation and energy recapture even in moderate winds.

Turbine Technology Comparison

Traditional Wind Turbine VS Blade Tip Power System



Turning a wind turbine into a wind generator by eliminating the gear box.

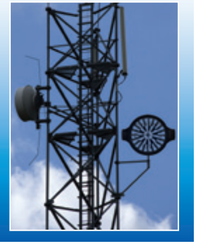
Turbine Mounting Options: At 241 lbs (110 kgs) and 6 feet (1.8 m) versatile – like no other.

Flat Roof (Commercial)
QuadPod and Ballast Mount

Pitched Roof
QuadPod and Roof Box

Pole Mount (Commercial or Residential)

Cell Tower Mount (Commercial)



Directional Fins & Braking

The directional fins continuously guide the turbine for maximum wind exposure. The system starts turning at 0.5 mph (0.2 m/s), automatically shuts down in high winds (+38 mph [+17.0 m/s]) through its electro-magnetic braking system and is designed to withstand winds up to 140 mph (62.6 m/s).

FAQ's

Many factors will affect the output of the turbine at each location depending on placement. Your location can be affected by trees, terrain and obstructions such as buildings next door, even placement on one end of a building or the other can affect the output. Correct site assessment is important to enhance the performance of your turbine regardless of your product choice.

- Always seek the highest elevation and lowest obstruction field as possible (33 feet (10.0 m) minimum, the higher the better).
- You may advise your city, town or neighbors that you're installing a new generation wind turbine, but at 241 lbs (110 kgs), 6 feet (1.8 m), 35 dB at 10 feet (3.1 m), it may be not necessary. We're here to help you.
- An average annual wind rating of 12 mph (5.4 m/s) is recommended as a good minimum wind speed to keep in mind, off grid locations might consider less.
- The WindTronics Wind Turbine is designed for all environments from hot to cold temperatures and from coastal locations to mountaintops.
- Electrical connection is very similar to a backup generator connected to the building or solar power to the grid. Refer to connection options A through D.
- The system is designed to be installed by a licensed electrical contractor.
- Our Smart Swap warranty program allows contractors to replace components easily.
- The roof box QuadPod system is designed for pitched or flat roof tops. As roof construction and roof lines vary, pole mounted installations are recommended for residential environments for optimal cost, flexibility and performance.

WindTronics™ has created a range of tools to assist in identifying proper site selection based on wind, rates and rebates.

www.windknowledge.com
Easy look up of US and Canada wind rates, electrical rates, rebates and incentives.

www.windestimator.com
Global wind statistic, predominant wind direction and wind strength analysis.

Award Winning Technology

2010 EDISON AWARDS

Edison Awards Gold Winner in the Energy & Sustainability category

Popular Mechanics

One of the Most Brilliant Products of 2009 by Popular Mechanics Magazine

UNIDO Blue Sky Award

2009 UNIDO Top Ten New Technologies for Renewable Energy Utilization

Built like no other - Automated assembly lines.

Product Certification

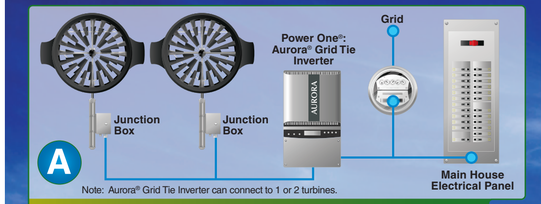
WindTronics™ Wind Turbine
IEC 61439-1, CENELEC EN 61000-6-2, CENELEC EN 61000-6-4, IEC 60034-1, IEC 60204-1

SmartBox™ Control System
UL 1740, CAN/CSA C22.2 #107.1

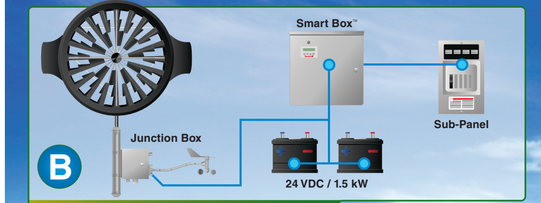
Intertek

Connection Options

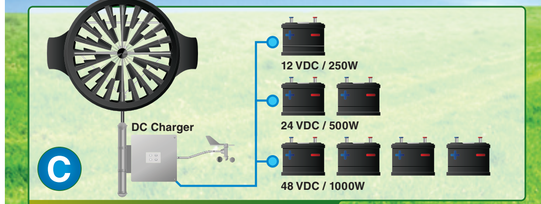
Connect to Building/House, Utility or 12/24/48V Batteries Converts your wind – like no other.



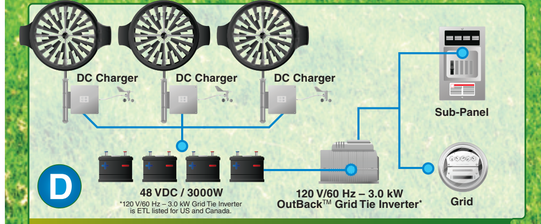
Grid Tie easy connection to utility - up to 2 tubines per Aurora® Inverter, no batteries required



Non-Grid Tie connects to the building subpanel



Direct DC 12/24/48 V battery charging



Grid Tie utility connection - up to 3 turbines per OutBack™ Inverter, operational during power failure