IDEAL 2000 Wind Generator

IDEAL2000 wind turbine system is one of the most successful small wind generator system in the international markets. The main superiority of this 1500W small wind turbine as below:

1) Pretty quiet, very very low noise .
2) Good output.
3) Safety in strong wind conditions.

Other highlights like low vibration construction; neat painting, simple installation and durable.

The Features & Technology:

Our wind turbines feature advanced technology to improve performance and durability; Here are some features and technologies included in our wind turbine:

1. Generator

We use the strongest magnets (Neodymium Iron Boron Magnets) and most advanced technology for our rotor. Experiments show that using Neodymium Iron Boron Magnets as materials, it is more light weight and high efficient than any other materials. And our rotor tangential structure design also contributes to the whole rotor superior.

Stator using high temperature durable lacquered wire materials, plus vacuum impregnation treatment, the insulation performance greatly improved, also more durable.

Having two bearing allows the wind turbine to start faster than a single bearing wind turbine. Thanks to this technology you can start producing energy at wind speeds as low as 1.8 m/s. Double bearing system also have the advantage of reducing the vibration emitted by the generator.

2. Blades

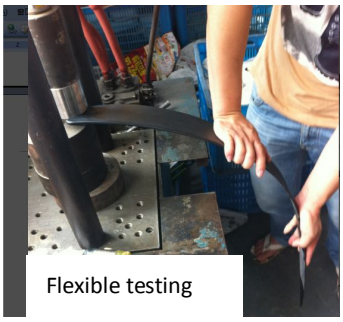
For same length blades, due to airfoil differences, output power and effiency is not same. Therefore, optimizing design of blades airfoil is very important. With our technology on fluid dynamics and aerodynamics, together the adoption of European blade design idea, our blades obtain a good start up performance and higher output than competitors.

Besides, another superiority about our blades is the carbon fiber composite materials. Using the most advanced technologies, our blades contain 30% carbon fiber. Carbon fiber is light weight, flexible and long life span. Due to these characteristic, blades have the advantages of bending at high speeds, thus reduce airflow force and slow down in high wind speed conditions. Blade with galss fiber materials, it is tough, sometimes in strong

wind conditions, blades can't give off the strong wind force, thus destroy the installation.

And we have made the rotor blades balance treatment, in order to keep the quiet and no vibration when rotating. We make inside nuts fasten structure between blades and hub connection.

Fasen connection design



Flexible testing

Inside section of blades
white parts is carton fiber material

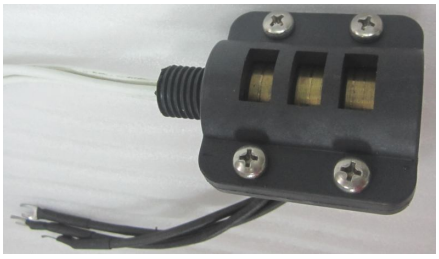
3. ***Aerodynamic body design***

Using high strength aluminum alloy materials, plus precision die casting technique, makes our wind turbine body is light weight, high strength, anti-corrosion and durable. Besides, aerodynamic design is makes our wind turbines more effective but also more pleasing to your eyes. All our turbines have a powder coating finish, not only does it give them a perfect painting and feel but it also increases its life span by protecting the body from any weather condition and is easier to clean. Besides, aerodynamic design also contributes to this super low noise.

4. Double Security System

All our wind turbines are equipped by not one but two security systems. If the wind is too strong and the rotor speed is too high our security systems will directly act on the generator to prevent damage to the system.

5. Slip ring :

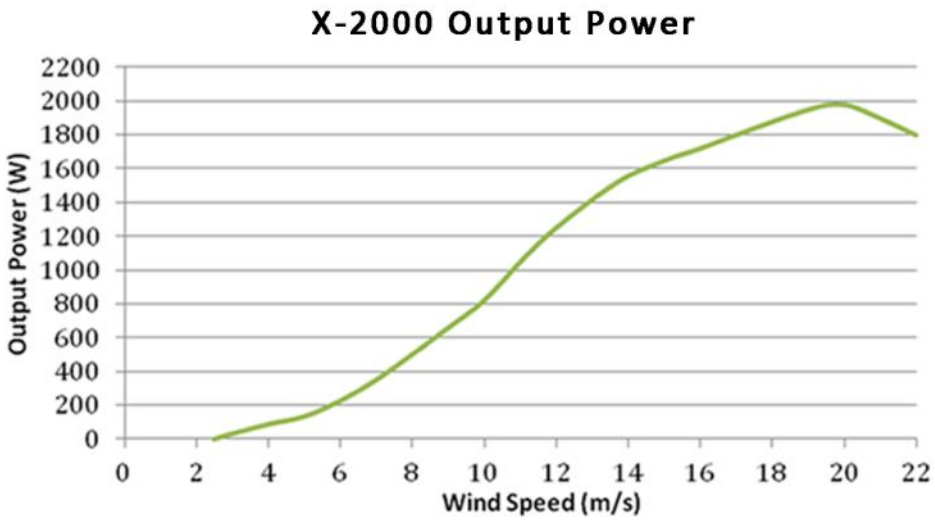


Poor quality slip has the problem to bear high currents, thus in strong wind conditions, slip ring/brush overheating. This slip ring is an integrated one; there are high copper materials involved. This slip ring can stand as high as 200A instant current. And its design is very very smooth, thus it can quickly turn the body to the wind direction to get a high our effiency.

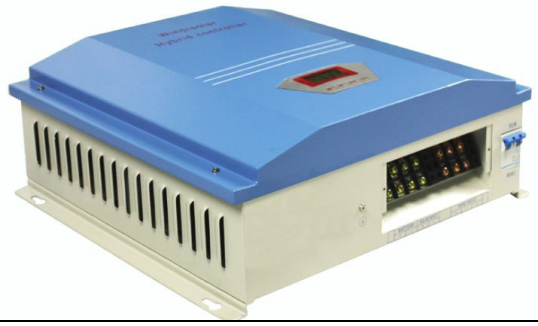
Specification:

Model Name	IDEAL2000
Model Number	X-2000
Wind turbine type	Horizontal axis, up-wind
Rotor diameter	1900mm
Net weight	24.5 kg
Tower diameter	49mm to 60mm according to customer request
Blades number	5
Blades material	Caron fiber reinforced plastic
Blades mass	660g /pcs
Body material	Aluminum high pressure diecast
Body construction	Completely one
Product finish	White painting
Tower Connection	flange connection
Start up wind speed	1.8 m/s
cut in wind speed	2.5 m/s
Survival wind speed	50m/s
Rated Power	1500W (13 m/s)
Rated Rotor Speed	750 rpm
Maximum power	2000W (20m/s)
Working Temp. range	from -40℃ to 60℃
Product Life (years)	15
The sound pressure level	32dB @ 5m/s @ 5m behind rotor (an air density of 1,225 kg/m³)
Generator	Synchronous-type, three-phase power generator with neodymium iron boron magnets
Rated Output voltage	Off grid 48v or 96v or 108v DC ;on grid 110v or 200v DC
Braking system	Electro-magnetic & blade over speed aerodynamic braking system
Yaw control	360 degree free yaw
Direction control	Tail tracing
Control system	Brake mode
	safty control
Recommend ed system	Off grid: deep cycle lead acid battery, on grid , pls contact your dealer
Warranty period	3 year

Output power in real test datas:



Off grid wind solar hybrid controller:



Product Model	**WWS20-48-N00**
Rated Battery Voltage	48V
Rated Wind Turbine Input Power	2kW
Maximum Wind Turbine Input Power	3kW
Wind Turbine Brake Current	42A
Rated Solar Input Power	600W
Floating Charging Voltage	58V
Display Mode	LCD
Quiescent Current	≤20mA
Ambient Temperature & Humidity	-20～+55℃/35～85%RH（Without Condensation）
Temperature Compensation Function (Optional)	-4mV/℃/2V ， －35℃--+80℃ ， Precision：±1℃
Dimension(L×W×H)	445×425×170mm
Net Weight	12kg
In order to serve our customers better. Our company can adjust parameters configuration according to customer's requirement.	

In a conclude, good quality & reliable performance, long time durable are our main concerns, most of all, good quality products at an affordable price for all consumers. And we are glad and feel confident to hear your comparing feedbacks with other famous brands wind turbines in the markets.

Frequent asked questions:

1. <u>How about noise of this wind generator?</u>

The sources of sounds emitted from operating wind turbines can be divided into two Categories:

1) Mechanical sounds, from the interaction of turbine components.
2) Aerodynamic sounds, produced by the flow of air over the blades.

Our mechanical design, like double bearings; front-back faces; exceptional blades assemble and anti-vibration plastic pad connection with pole, blades design and materials, all these contribute to make IDEAL600 the quietest wind turbine in the world.

<u>2. Is it anti-corrosion in coastal areas?</u>

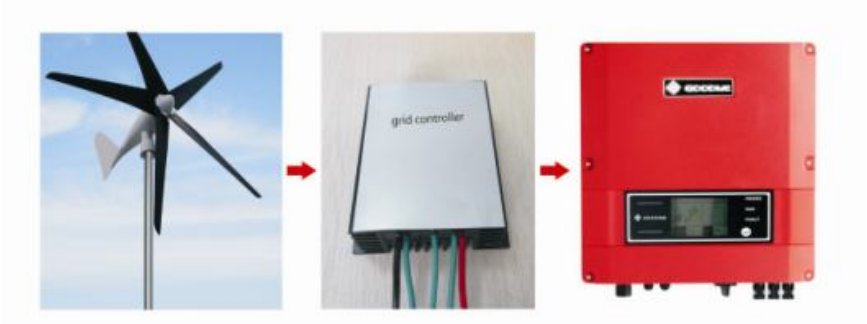
The body is made of a lightweight magnesium and aluminum alloy, and coated with a marine-grade polymer powder coat to prevent oxidation or corrosion.

3. <u>Is it possible for this wind turbine connect grid directly ?</u>

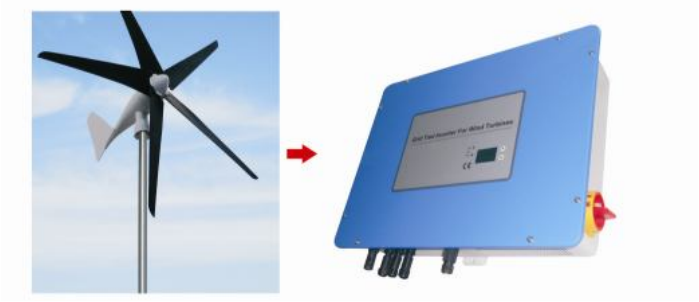
We offer different grid tie systems according to customer request. And our IDEAL2000 can work with other famous brands grid inverter in markets.

Grid tie system :

Optional 1: economical solutions:



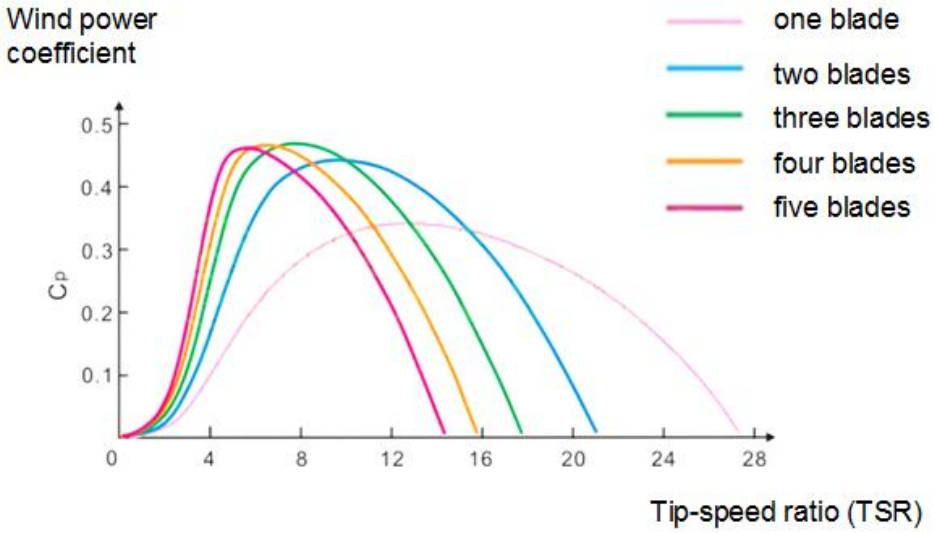
Optional 2: Two in one solutions:



3. Why we use 3 blades in this IDEAL400, IDEAL600 wind generator, and 5 blades for IDEAL2000 wind generator ?

Many scientific experiments show that 3 blades and 5 blades wind generator have a good wind power coefficient. For small size wind turbine, as it is relative high rotate generator, thus in order to get a good output in high wind conditions, we use 3 blades for IDEAL400 and IDEAL600. Besides, three blades wind turbine enjoy a better rotate balance, and output power is more reliable. What is why most small wind turbines below 1kW choose 3 blades wind generator in the markets.

For 5 blades wind generator, due to higher resistance, efficiency in high wind condition is lower than 3 blades, but it has a good output in low wind speed conditions.
For IDEAL2000, when we design the inside motor, we take the consideration of this coefficient to make best power optimization in high wind condition. Below chart is wind power coefficient for one to five blades wind turbine.



The power coefficient is a measure of how efficiently the wind turbine converts energy in the wind into electricity. Data is obtained by dividing the electricity produced by the turbine by the total energy available in the wind. Therefore a high power coefficient indicates a high efficiency at a certain wind speed.