

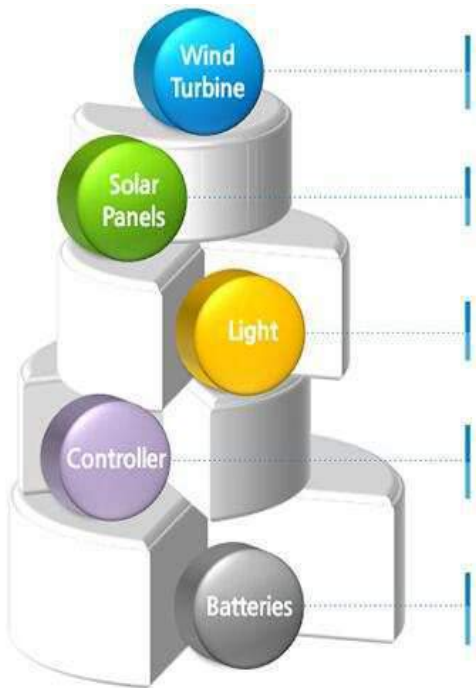
FREE WIND ENERGY



VERTICAL AXIS WIND TURBINES

Registered patent: Appearance & complete wind system
TUV:CE & EMC SGS:Rohs

**Designed to operate under extreme environment
and temperatures from -40C up to +70C!**



SPIRAL WIND TURBINES



Blades: Special engineered and made by CBF material for long lasting operation

Generator:
Maglev generator.
Electromagnetic/wind round lateralization.160rpm .



MPPT Controller Unit: High efficiency constant current driver, automatic operation from dusk to dawn or timed ON/OFF operation.

Model	WSC40	WSC100	WSC150
Rated power	40W	100W	150W
Maximum power	60W	130W	180W
Nominal voltage	12V/24V	12V/24V	12V/24V
Start wind speed	1.5m/s	1.5 m/s	1.5 m/s
Cut in wind speed	2 m/s	2 m/s	2 m/s
Rated wind speed	10 m/s	10m/s	10m/s
Survival wind speed	45 m/s	45m/s	45m/s
Rated revolution	160 rpm	160 rpm	160 rpm
Whole Weight	16 kg	26 kg	32 kg
Diameter	520 mm	520mm	670mm
Just Height for blades (No include generator)	1.05 m	1.3m	1.5m
Swept area	0.55 m²	0.68 m²	1 m²
Blades number	2	2	2
Blade material	CBF	CBF	CBF
Generator	Maglev	Maglev	Maglev
Controller	MPPT	MPPT	MPPT
Speed way	Automatically adjust the windward angle.	Automatically adjust the windward angle.	Automatically adjust the windward angle.

Chose CBF as its Ideal Material for its Wind Turbines.

1) High chemical durability to impacts of water, salts, alkalis and acids

Unlike metal, CBF is not affected by corrosion. Unlike fiber glass, CBF is not affected by acids. CBF possess high corrosion and chemical durability qualities towards corrosive mediums, such as salts & acids solutions and, especially, alkalis.

2) High thermal resistance

A range of temperatures for CBF long-time application is 200~600 C.

Short-term impact of temperatures – up to 700 C.

Single impact of temperatures – up to 1000 C.

3) Compatibility of CBF with other materials

High compatibility of CBF with other materials (metals, plastic, glues) during producing process. Materials made on CBF basis can be processed with application of different “cold” technologies, such as moulding, winding, pultrusion, sputtering, etc.

See article "About prospects of application of materials from basalt fibers"

4) Higher Tensile Strength then Steel.

Basalt is incredibly strong, flexible, yet extremely light which was the ideal material of choice for the WindSmart Wind turbine. Making us the Lightest Vertical Axis Wind Turbine in the world.



Basalt has a 100 to 1000 Year Life Span

CBF is USED BY

NASA

Basalt from Volcanic Rock

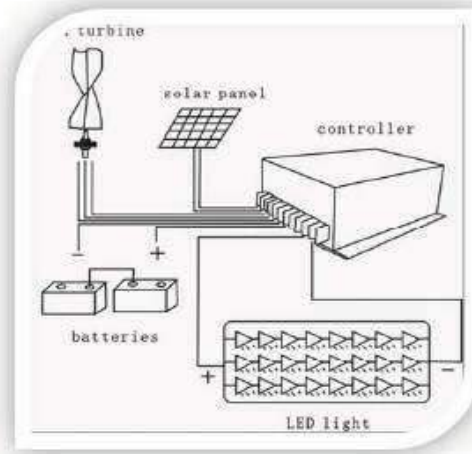


SPIRAL TURBINE APPLICATIONS



Hybrid street lights offer more effective energy production.

WIND SOLAR LED Street Lighting Solutions



Utilizing both Wind and Solar for power generation, we can guarantee a continuous three (3) night illumination even if no wind or solar activity within the previous days due to our sophisticated energy management system and battery storage system.

Compare with others

Classification	Typical Light	Solar Light	Horizontal Hybrid Light	Vertical Hybrid Light
Appearance				
Power Source	Electricity	Sunlight	Wind Power + Sunlight	Wind Power + Sunlight
Sudden Change of Wind Direction	Not Applicable	Not Applicable	Not Good Working of Wind Turbine	Good Working of Wind Turbine
Available Charging Time	Not Applicable	3.5 Hours a Day	All Day Long but not efficient due to Horizontal Wind Turbine	All Day Long
Electric Shock	Yes	No	No	No
Noise	Not Applicable	Not Applicable	Over 70~80dB	Approximately Under 15dB
Environmental Pollution	Yes	No	No	No
Turn On & Off	Depends on Electrical Power Supply	Automatically based on Sunset and Sunrise	Automatically based on Sunset and Sunrise	Automatically based on Sunset and Sunrise and Embedded Time
Working	Working well except Blackout	Not Enough Working	Sometimes Not Working	Very Good Working

WIND TURBINES & MARKETING



The blades can be colored with a company's logo or a country's flag and become a successful marketing media

What is the Applications of

Landscape
lighting, road
lighting

1

Oil and gas
pipeline
monitoring

2

Forest fire
prevention
and control

3

Integrated
lighting and
monitoring
system for
border line

4

Home and
remote areas
without
electricity

5

Communication
base station
power supply,
island power
supply

6

Wind and
solar hybrid
distributed
power station

7

Scenery
complementary
electric pile

8

