

# WINDSIDE

Wind Turbines



MSM offers its wide range of vertical wind turbines WINDSIDE as ideal complement for battery charging, making wind energy into electricity wherever energy is needed. They are specially suitable for offshore installations, buoys, small islands, vessels, ..., under the harshest marine conditions.

WINDSIDE wind turbines provide highest efficiency and durability with a minimum maintenance.

One of the main advantage of its vertical axe construction is its autocontrolled rotational speed, also in conditions of extreme wind.

Also characterised by their respect for the environment due to their soundless (0 dB), ensuring a safe installation in population centres, public spaces, natural areas, etc.

## Features:

- Vertical wind turbine based on sailing engineering principles.
- The turbine rotor is rotated by two spiral-formed vanes.
- Operating in harmony with nature and environment.
- No need to stop or secure during storms.
- No need to be turned to wind direction.
- Stands snow, frost, heat and humidity.
- Composite re-enforced fibre glass propellers.
- Marine-grade aluminium generator casings.
- Stainless-steel hardware.
- Top quality lubricated bearings.
- Depending on its use and the weather conditions, we offer various models to ours customers.



# WINDSIDE

Model	WS-0,15B	WS-0,30B	WS-0,30A8	WS-2B	WS-2AK	WS-4B	WS-4A
Weight	38 kg	46 kg	98 kg	550 kg	1,000 kg	800 kg	1,200 kg
Swept area	0.15 m <sup>2</sup>	0.30 m <sup>2</sup>	0.30 m <sup>2</sup>	2 m <sup>2</sup>	2 m <sup>2</sup>	4 m <sup>2</sup>	4 m <sup>2</sup>
Voltage	12/24V	12/24V	12/24V	12/24V	12/24V	12/24/48V	12/24/48V
Max. power	71/132W	97/190W	102/201W	420/792W	432/864W	420/840/1,632W	500/900/1,680W
Regulator	WGU 22	WGU 22	WGU 22	WGU 25-50	WGU 25-50	WGU 50	WGU 50
Fixings	6 uds. M12	6 uds. M12	8 uds. M20-M16	8 uds. M30	20 uds. M20	8 uds. M30	8 uds. M30
Wind load	50 kg	100 kg	100 kg	500 kg	500 kg	1,000 kg	1,000 kg

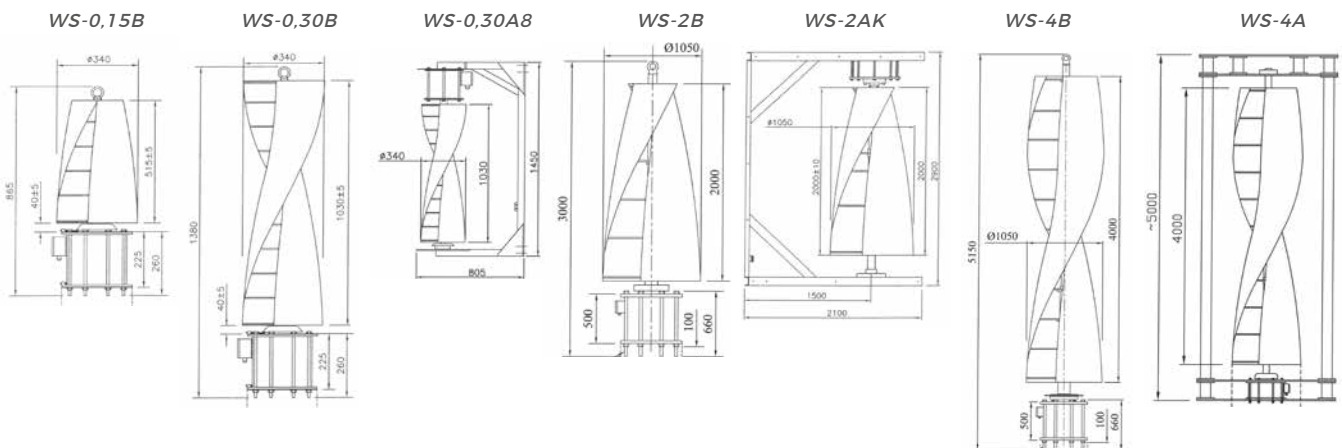
## Materials and environment

- Fibre glass vanes.
- Aluminium fixings.
- Chrome coated steel or stainless steel shaft, depending on model.
- Generator and generator end plates from marine grade aluminium or hot-dip galvanized steel, depending on model.
- Stainless-steel (A4 o A2) or hot-dip galvanized steel (Zn) bolts.
- Produces maximum amount of energy in storms.
- Soundless (0 dB), measured in 2 meters distance from the vane.
- Long service life.
- Minimum maintenance, only lubrication.
- Safe to people, animals and nature.

## Approximate annual power production / Annual average wind speeds (KWh/year)

m/s	WS-0,15	WS-0,30	WS-2	WS-4
4	15	30	120	400
5	40	80	700	2,000
8	96	192	1,800	5,200
10	206	413	3,900	11,100

Specifications subject to change without previous notice.



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