

50 watt wind turbine generator

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The Leading Edge LE-v50 vertical axis wind turbine is a compact, silent and lightweight turbine designed to trickle charge marine batteries or for low power electronic devices such as data-loggers, radio and telemetry equipment (not for domestic use).

The LE-v50 wind turbine is also a regular sight at marinas providing a trickle charge to valuable batteries whilst the owners are away. This saves money by not having to connect to 'shore power' or repair and replace expensive batteries that have been damaged by becoming discharged. It reduces the effects of mains induced electrolysis and corrosion on the boat as well as meaning that owners can go on extended cruises without need to run the engine.

The LE-v50 uses a proven 'Savonius' rotor design which gives silent and effective performance. Using the latest solid modelling and Computational Fluid Dynamic simulations, we have come up with an elegant 'cross-ventilated' rotor which provides good power conversion for a vertical axis wind turbine of this size.

The rotor is then coupled to our specially designed low inertia, zero 'cogging' axial flux permanent magnet alternator. Using Neodymium rare earth magnets, this alternator design has become one of the most field proven and effective alternators that is deployed across the entire range of Leading Edge wind turbines!

Unlike any other small wind turbine you will find, this turbine can even be allowed to run 'off-load' with no connection to the batteries. The LE-v50's rotor design will limit its RPM automatically. If anything comes into contact with the rotating blades, it will be pushed away from the rotor rather than being caught by the spinning and causing damage.

The LE-v50 wind turbine is manufactured from high quality aluminium alloys and stainless steel which has been laser processed, CNC machined, hard anodized and powder coated to ensure that the turbine will withstand the harsh effects of the extreme environments that it was originally designed for.

With only 1 moving part, there is little to go wrong and no brushes or slip-rings to wear out and need replacing. The bearings are sealed for life and fully lubricated, so no greasing or maintenance is required. All of the fixings are manufactured from A4 stainless steel which are able to withstand the most corrosive of environments.

Generator: 1 piece Construction: Double-disc generator (IP64), 12-pole (24 neodymium magnets), AC 3-phase, brushless, cogging-free. Housing/Socket: Extremely sturdy ABS compound material with stainless steel connecting elements. Axle: Stainless steel; equipped with precision ball bearing seatings and a crafted



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centering cone with M16 female thread; for locking of the rotor axis equipped with a solid plastic handle. Bearings: Massive branded stainless steel ball bearings with lifetime lubrication. Cable connection: Twice implemented stable strain relief on generator and socket.

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