



LIGHT
WIND
TURBINES

LIGHTWIND TURBINES
LW-P1000



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LW-P1000

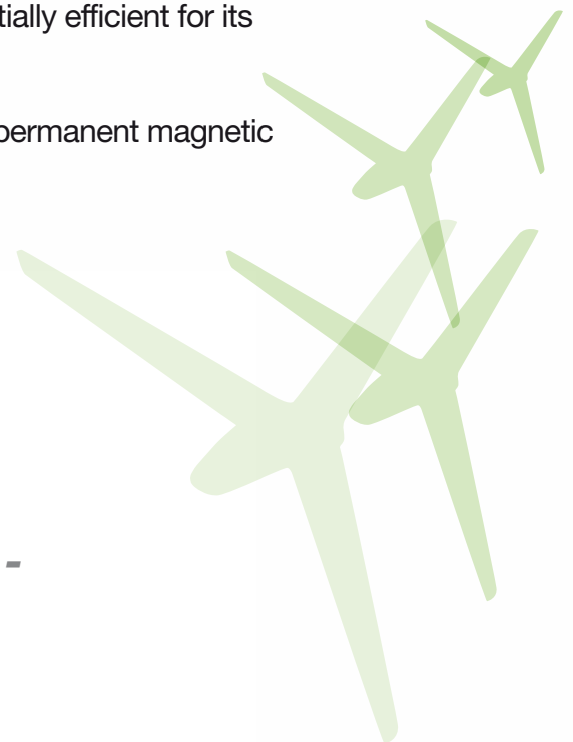
The **LW-P1000** is a light-weight, all carbon fiber, portable, off-grid wind turbine.

The **LW-P1000** is particularly suitable for instant power needs due to its exceptionally light weight. It holds the best weight-power ratio for turbines of its kind.

The **LW-P1000** is designed to operate under high turbulence resulting from extreme wind conditions and low mast.

The **LW-P1000** propeller is specifically designed to overcome rapid changes in wind direction and speed and hence exceptionally efficient for its designed purpose.

The **LW-P1000** uses a synchronous alternator with a permanent magnetic field.



USES

- **INSTANT POWER FOR ANY NEED -**
- **CRISIS SITUATIONS -**
- **EXPEDITIONS -**
- **MOBILE COMMAND & CONTROL POSTS -**
- **CAMPING -**
- **REMOTE TELECOMMUNICATIONS SITES -**

ADVANTAGES

LIGHT WEIGHT
due to high grade carbon fiber

LOW NOISE EMISSIONS
due to low tip speed

HIGH TORQUE
due to unique propeller design

STEADIER ROTATION
due to higher moment of inertia

STEADIER STEERING
due to hinge mounted tail



**POWER FOR CRISIS
WHEN YOU REALLY
NEED SOME POWER**

Whether be it a storm or a man-made crisis, when you **really** need some power but grid power is off, fuel supply is scarce the **LW-P1000** combined with a compact petrol generator, PV cells and a small battery bank--will give you the power you need.

The **LW-P1000** incorporates a side gust and extreme wind protection system based on nacelle furling.



CRISIS SITUATIONS



CRISIS SITUATIONS

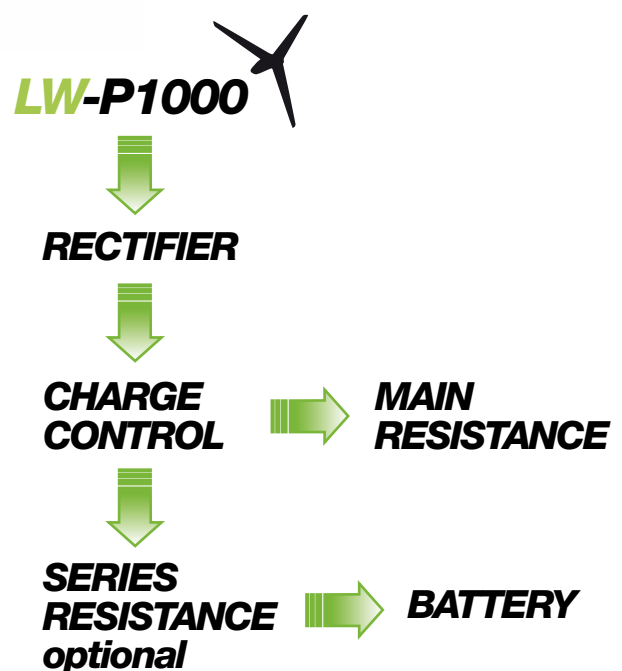
REMOTE TELECOMMUNICATIONS SITES





ELECTRICAL SYSTEM

In a classic turbine connection, the current generated by the turbine is rectified by a diode bridge (converting to DC) which is then fed into a charge controller. During operation the charge controller monitors the battery state and the current intensity. In case that either the battery reaches its full capacity or that the current rises excessively, the charge controller activates the main parallel resistor in order to dissipate the excess energy. An optional resistance is used in series with the battery in order to increase generator efficiency at high output. This in turn does not affect overall system performance.





CAMPING

ALTERNATOR

The 16 pole generator is based on revolutionary nickel coated neodymium-ferrom-boron magnets allowing operation on low RPMs and is connected to the propeller by 'direct drive' for efficiency and durability.

LIGHT WEIGHT

The extensive use of high grade carbon fiber and special design results in a 40Kg wind turbine which can be handled by two persons only.

THE PROPELLER

A 1.8m diameter blade resulting in a swept area of 2.55 square meters and a tip speed ratio (TSR) of 3.5.



MOBILE COMMAND & CONTROL POSTS

THE TRIPLE ENERGY SOURCE

In order to allow constant power in any condition the **LW-P1000** is designed to operate in a multiple energy source configuration where it is configured to work with PV cells and a compact portable generator.



PV CELLS

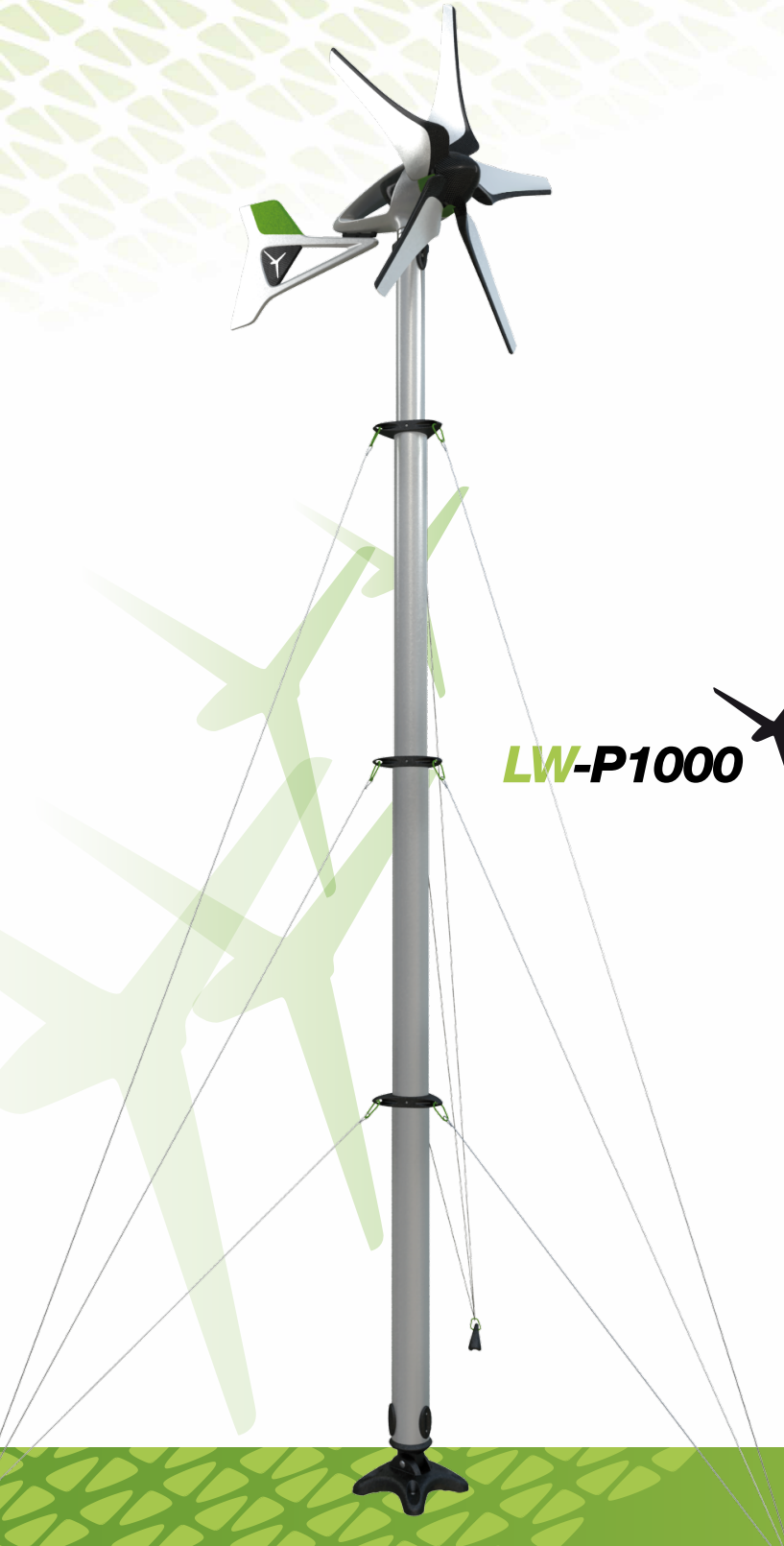


BATTERY



PORTABLE GENERATOR

LW-P1000  



PORTABILITY

- LIGHT WEIGHT-
- ABLE TO WITHSTAND RIGOROUS HANDLING-
- SIMPLE TO DEPLOY-
- MINIMAL VOLUME WHILE FOLDED-
- HIGH MECHANICAL STRENGTH-
- RESILIENT TO ENVIRONMENTAL EFFECTS-
such as corrosion

EQUIPMENT BOX

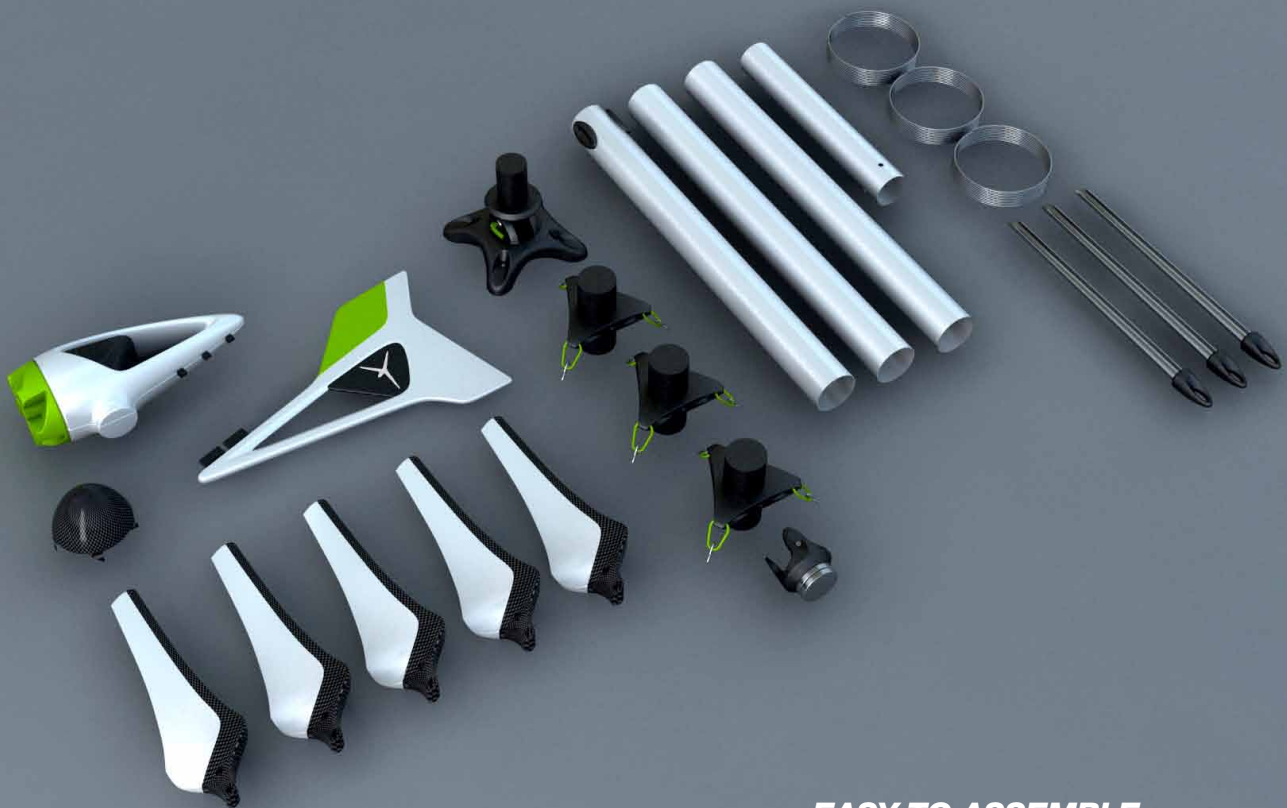
&

POLE BAG



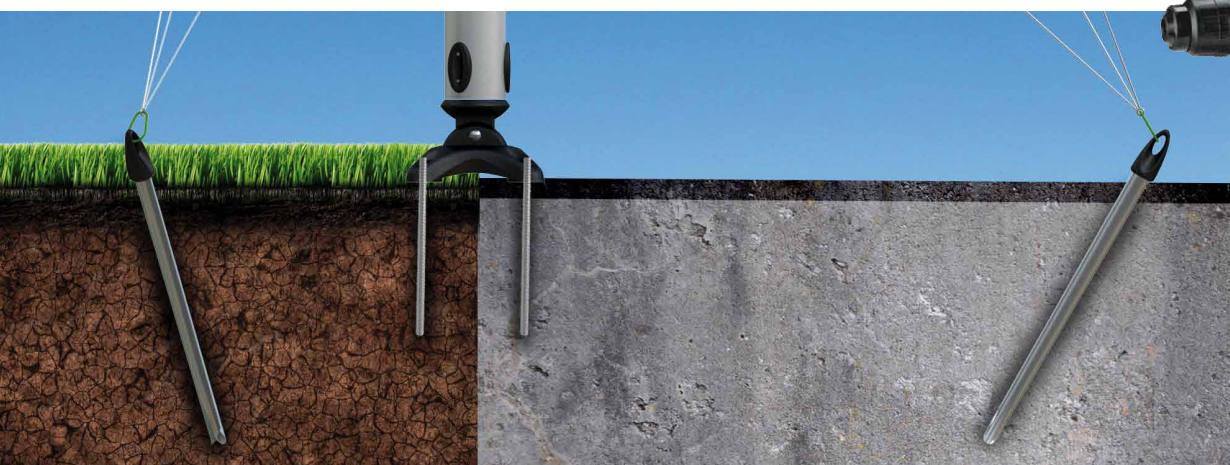


EASY TO TRANSPORT



EASY TO ASSEMBLE

ROOF MOUNTED



**DRILLED TO
ANY SURFACE**



CARBON FIBER

In order to meet rigorous weight-power performance and mobility demands the **LW-P1000** is made wholly of high grade carbon fiber composite material.

The use of carbon fiber is ideal for the uses of the LW-P1000 possessing high mechanical strength and excellent elastic properties.

Parts made of carbon fiber are resilient to fatigue fractures the main culprit in small turbine failure, allowing the **LW-P1000** years of fracture free operation. Due to the CF special properties and Lightwind unique production technology—the **LW-P1000**'s blades can withstand rigorous handling and harsh environmental conditions, thus rendering the **LW-P1000** ideal for demanding conditions and extreme climates.

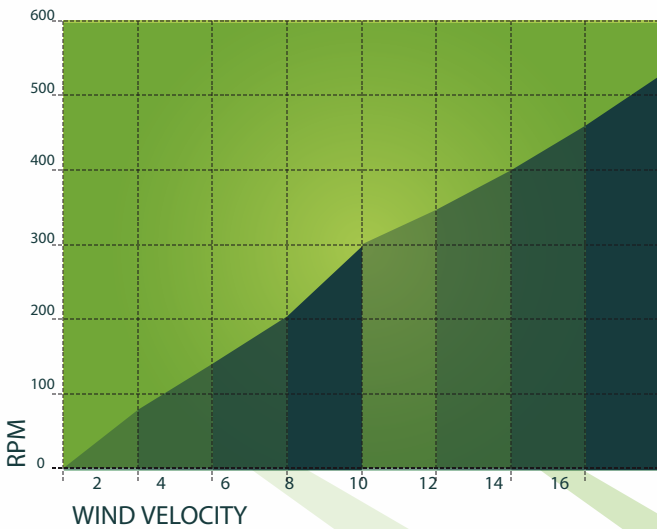
Composite material technology also enables production of precise parts with complex geometrical forms which allows unique quiet operation, balanced propeller and higher turbine efficiency.

Carbon Fiber also renders the LW-P1000 impervious to electro-chemical corrosion (rust) allowing deployment on boats, yachts, seaborne structures and beaches. Due to CF's superb strength to weight ratio (much better than aviation grade aluminum) the LW-P1000 can survive storm-like wind conditions without being damaged.

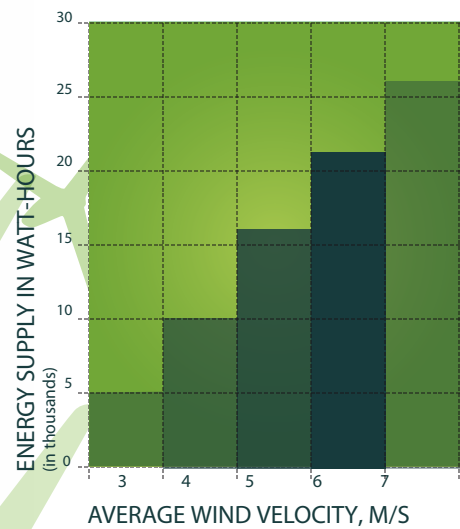


LWP-1000 IN NUMBERS

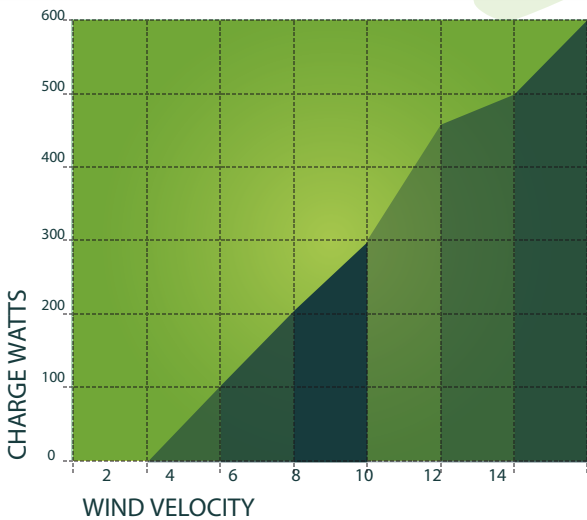
OUTPUT AND EFFICIENCY



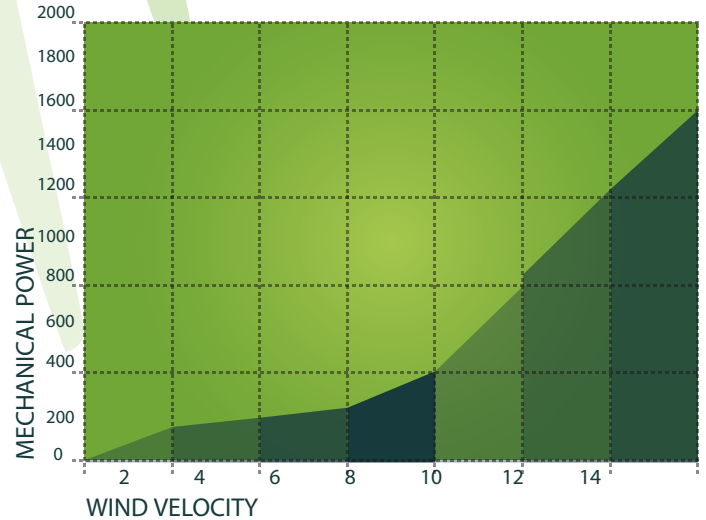
WEEKLY TOTAL ENERGY SUPPLY

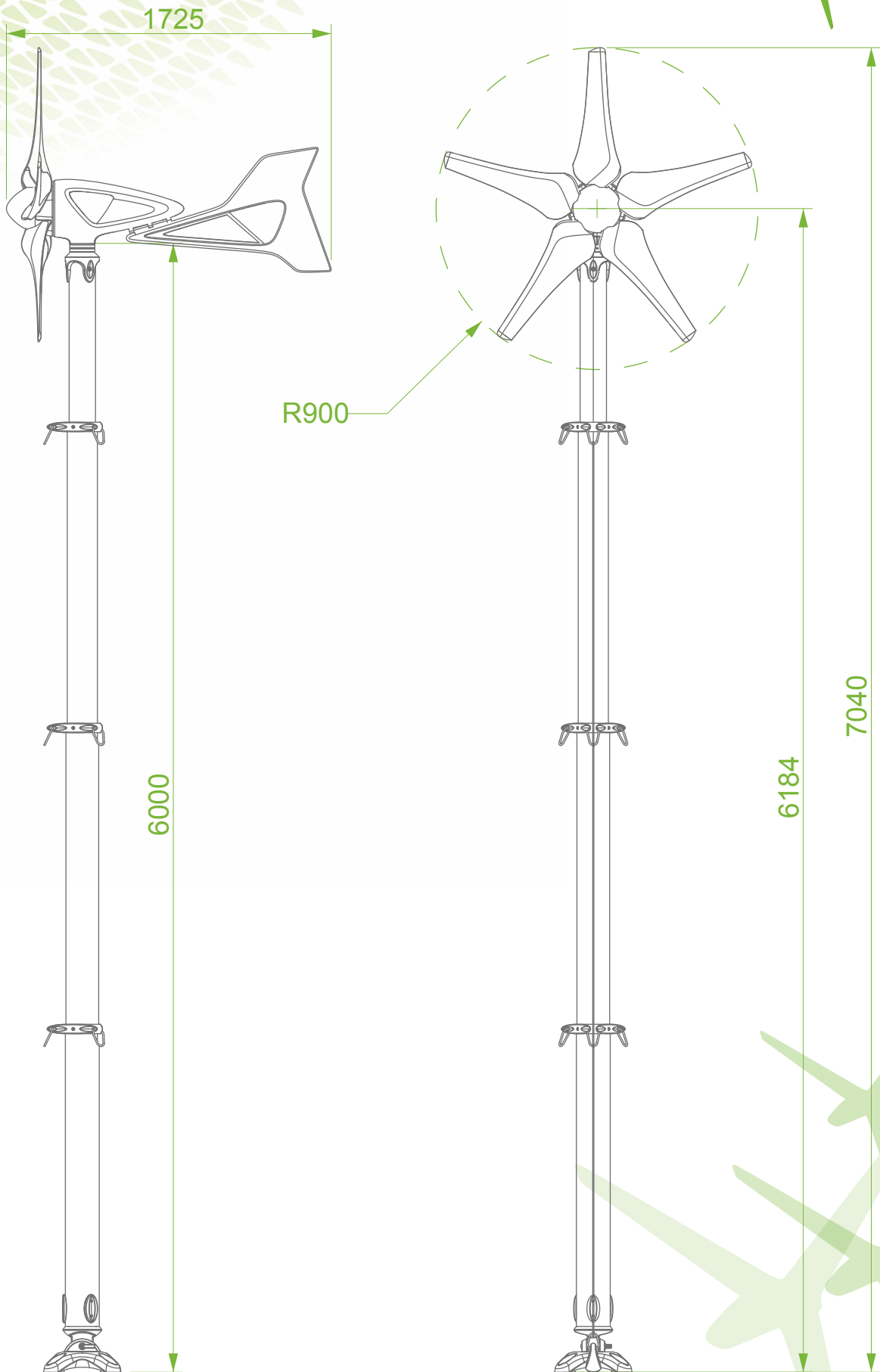


CHANGE POWER VS WIND SPEED



MECHANICAL ROTOR POWER







Lightwind Turbines
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