

TECHNICAL  
DATA SHEET

HYBRID AEROLEAF  
336 W

By

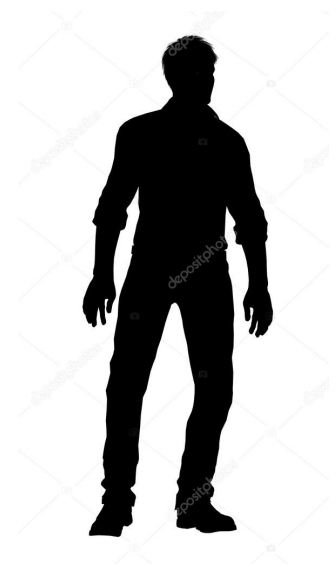
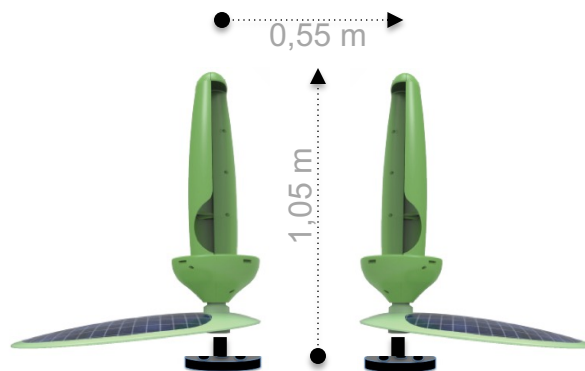


## Hybrid Aeroleaf General principle

The Hybrid Aeroleaf is made up of a standard Aeroleaf and a solar petal at its foot, all developing a Max power of 336 W (300 W for the Aeroleaf + 36 Wp for the petal).

The Hybrid Aeroleaf can be installed in line or staggered as on any support capable of absorbing the forces and vibrations transmitted by the rotating leaf, and subject to a distance of 55 cm between 2 Aeroleafs.

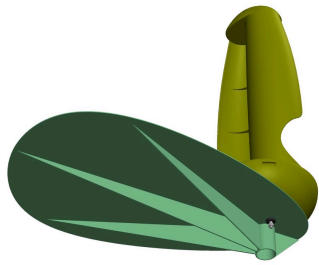
It is thus possible to choose the exact number of leaves desired according to the electrical need to be satisfied or the space available.



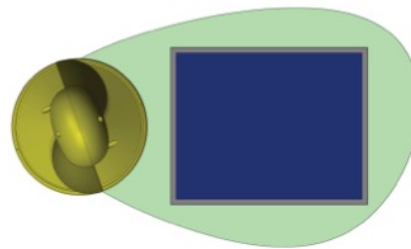
Aeroleaf hybrids are sold individually from a first set of 12 pieces, for a minimum power of 4 kW (4032 W).

Hybrid Aeroleafs are always supplied with an electrical cabinet which contains all regulatory safeguards including surge arrester, fuses and inverters (one for the petals, the other for the Aeroleafs).

Hybrid Aeroleafs thus form a particularly relevant electrical unit, easy to deploy, and infinitely combinable. The Aeroleafs ideally find their place on roofs and terraces, along roads, or on telecom towers or any other support.



Bottom view (n.c)



Top view (n.c)

The hybrid Aeroleaf maintains the aerodynamic profile of the standard leaf which has been optimized to exploit the weakest winds (production threshold  $<2.5$  m / s of wind) as well as the strongest (up to 43 m / s in continuous, 50 m / s in gusts).

The solar petals are formed from a 2 mm thick semi-flexible photovoltaic film lying on the posterior face of the petal, which is made of aluminum to minimize the load and the efforts to be transmitted.

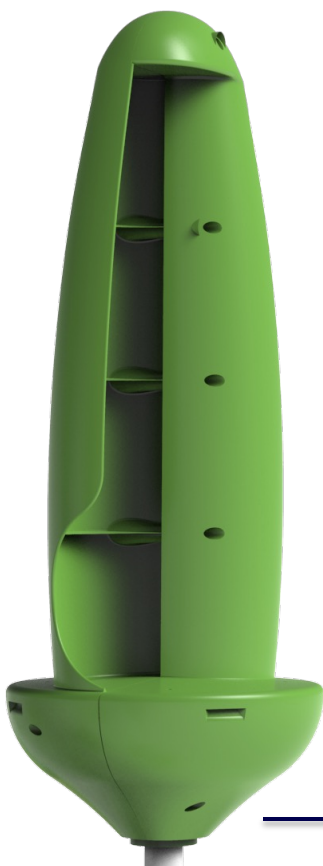
The solar petals are positioned perpendicular to the leaves at a 5 degree angle to facilitate the flow of the rains.

This slight tilt offers little wind resistance while still allowing airflow to benefit from leading edge acceleration, giving the leaf an energy gain of  $\pm 5\%$ .

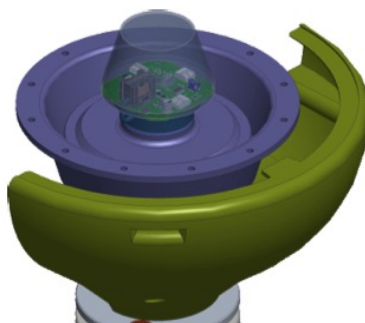
Hybrid Aeroleafs operate perfectly quietly thanks to their small blade radius (little air circulated) and the absence of belts and gears (no mechanical noise).

The solar petals have an optimized photovoltaic surface to take advantage of the best size-weight-cost-energy efficiency compromise.

# Aeroleaf characteristics

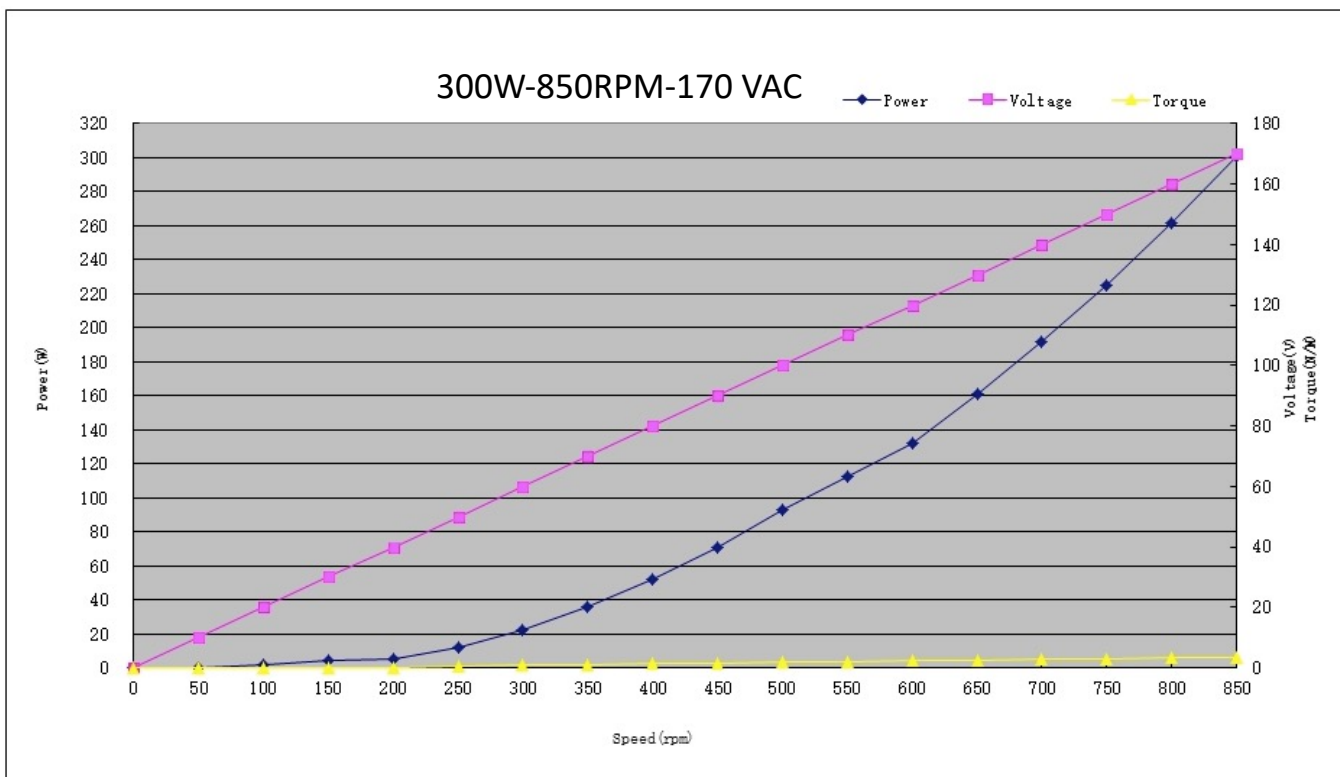


New World Wind has developed a proprietary micro-generator as well as a leaf-shaped blade capable of harnessing the weakest winds and turbulent winds.



## Micro generator NWW

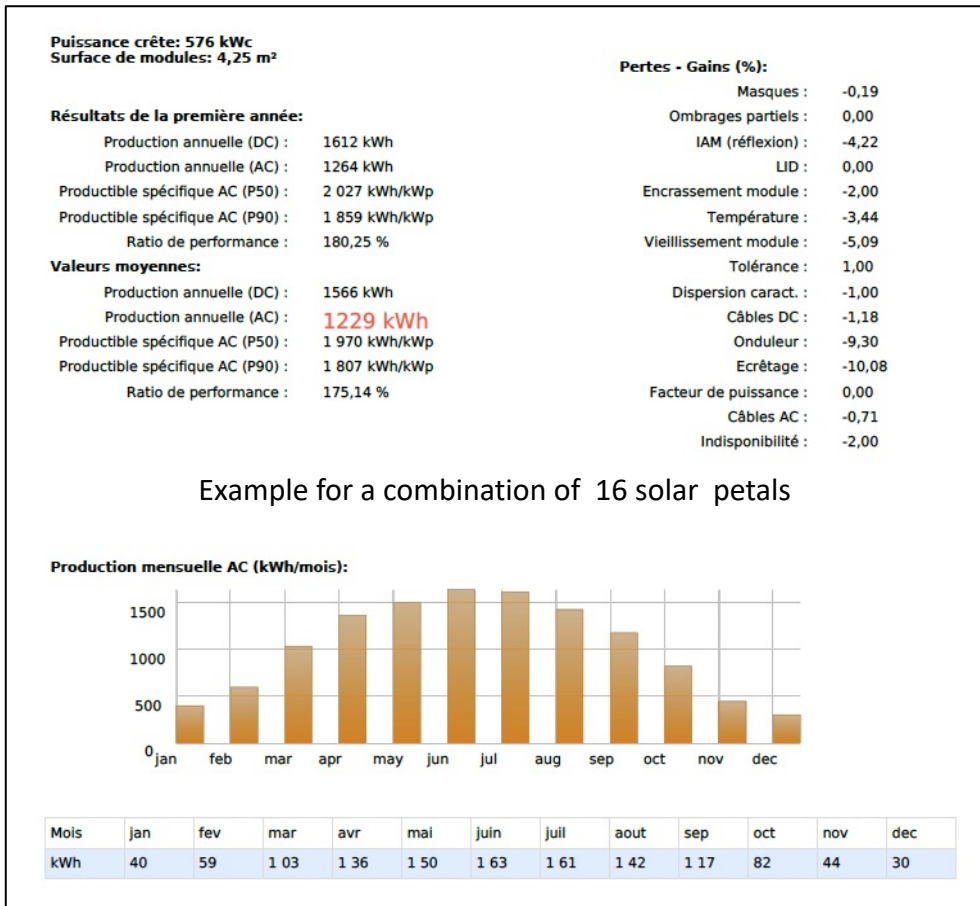
Proprietary technology with electronic card embedded in each Leaf for optimized regulation and maximum efficiency



Voltage / Power / Rotation speed by Aeroleaf alone

New World Wind has developed a solar film specially adapted to the petal of the Hybrid Aeroleaf. This is a semi-flexible crystalline film mounted on the petal.

With 36 Wp per unit, for an area of only 29,5 cm<sup>2</sup>, the petal provides the Aeroleaf with additional energy that is particularly relevant for sunny regions.



# Summary table

## GENERAL SPECIFICATIONS

Aeroleaf height with petal	1,05 m
Petal length	0,905 m
Petal width	0,582 m
Minimum distance between 2 hybrid Aeroleafs	0,55 m
Aeroleaf weight with petal	17,5 kg

## HYBRID AEROLEAF SPECIFICATIONS

Starting speed	< 2,5 m/s (9 km/h)
Rated power by Aeroleaf	163 W
Solar petal power	36 Wc
Photovoltaic surface	0,295m <sup>2</sup>
Maximum wind resistance	43 m/s continuously (155 km/h) 50 m/s in gusts (180 km/h)

## ELECTRICAL SPECIFICATIONS

Installed power	336 W
Required voltage	48 V
Output voltage of solar and wind inverters	230 V

## ENERGY EFFICIENCY BY EACH HYBRID AEROLEAF

WIND (m/s)	turbul intensity	Factor k	energy yield per Aeroleaf (kWh)	Solar petal surface m <sup>2</sup>	energy yield per solar petal (kWh)	TOTAL ENERGY YIELD per HYBRID AEROLEAF kWh/year
<b>3,5</b>	0,85	1,18	<b>61,7 kWh</b>	0,285	76,8	<b>138,5</b>
<b>5</b>	0,85	1,18	<b>139,3 kWh</b>	0,285	76,8	<b>216,1</b>
<b>6,5</b>	0,85	1,18	<b>213,0 kWh</b>	0,285	76,8	<b>289,8</b>
<b>8</b>	0,85	1,18	<b>288,6 kWh</b>	0,285	76,8	<b>365,4</b>
<b>10</b>	0,80	1,26	<b>386,1 kWh</b>	0,285	76,8	<b>462,9</b>
<b>12</b>	0,80	1,26	<b>461,8 kWh</b>	0,285	76,8	<b>538,6</b>