



# ***Aeolos-H 50kW***



***Aeolos wind turbine  
SINCE 1986***



# Aeolos-H 50kW

windturbinestar.com



## Turbine

Rated Power 50 kW  
 Max Power 60 kW  
 Cut-in Wind Speed 3 m/s (6.7 mph)  
 Rated Wind Speed 10 m/s (22.4 mph)  
 Survival Wind Speed 52.5 m/s (117.4 mph)  
 Design Lifetime 20 years  
 Overall Weight 3700 kg (8157.1 lbs)

## Rotor

Rotor Diameter 17.6 m (57.7 ft)  
 Swept Area 243.2 m<sup>2</sup> (2617.8 ft<sup>2</sup>)  
 Rated Rotation Speed 80 rpm  
 Blade Material Fiber Glass

## Generator

Drive Type Direct Drive  
 Generator Type Permanent Magnet  
 Generator Voltage 0-370Vac  
 Efficiency 95%

## Controller

Control System PLC with Touch Screen  
 Remote Monitoring Optional

## Safety

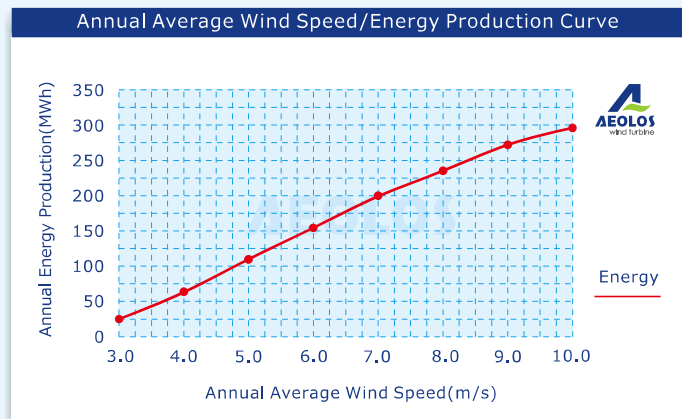
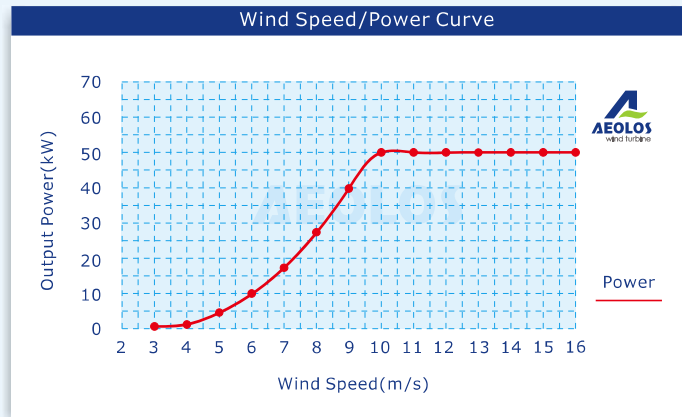
Main Brake System Pitch Control  
 Active Yaw Control  
 Secondary Brake System Hydraulic Brake

## Tower

Monopole Tower 12m, 18m, 24m, 30m  
 Hydraulic Tower 18m, 24m

## Warranty

Standard Warranty 5 Years



Aeolos-H 50kW Wind Turbine Annual Energy Production								
Wind Speed(m/s)	3	4	5	6	7	8	9	10
Output Power(W)	402	1240	4843	10300	17889	26703	39107	50664
Energy Production (MWh/yr)	24.78	62.32	110.2	158.0	202.2	238.6	269.3	292.4

\* Standard Air Density, Rayleigh Wind Speed Distribution

**5 YEAR WARRANTY**





## Why Choose AEOLOS-H 50kW Wind Turbine?

### Multiple Safety & Brake Protections

#### Mechanical Pitch Control:

Aeolos intelligent pitch control could change blades angle to ensure more power output at low wind speed and the stable power output in high wind speed. It will protect the wind turbine in over wind speed, over rpm and other faults. Aeolos all pitch control parts in the hub are mechanical parts without electronic parts. It is more reliable than the traditional electronic pitch control system.

#### Active Yaw Control:

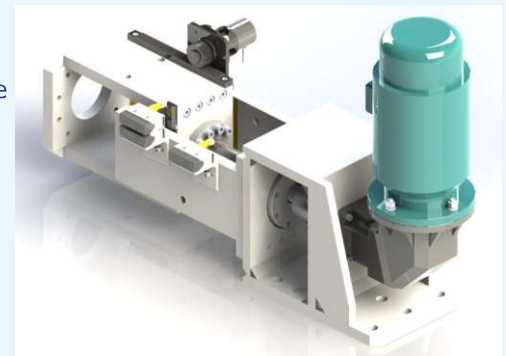
The active yaw control system will make the wind turbine auto trace the wind direction and auto yaw off the wind direction when there is over wind speed or other faults need to protect wind turbine. It could protect wind turbine even the pitch control system failed.

#### Two Spindle Hydraulic Brakes:

There are two spindle hydraulic brakes for Aeolos-H 50kw wind turbine. They were driven by high quality hydraulic station. They can stop the wind turbine in any emergency situation even without the pitch control protection and yaw control protection.

#### 80kW Dump Load Box:

Aeolos-H 50kw has the PWM dump loading protection for the over voltage fault. A 80kw dump load box will control the peak voltage together with the pitch control system. It will make the power output more stable in gust and high wind speed.



5 YEAR WARRANTY





### Grid Failure & Power Lose Protection

When there is grid failure or other reasons leading to the power lose, such as the cable broken, PLC damaged. Our wind turbine can still auto pitch control stop and start the hydraulic brake system. It is the physical self protection in the nacelle.

### Double Safety Design:

Aeolos use double safety design for main functions of wind turbine. There is one pitch control motor, one yaw motor and gear box, two spindle hydraulic brakes and two different UPS system in the nacelle. If there is on hydraulic brake or UPS damaged, another one could still work well to control the wind turbine.

### High Efficiency & Reliable Design

### Low RPM & Direct Drive Generator:

Aeolos 50kW is a directly drive permanent magnet generator with no gearbox. It is more reliable and less maintenance than the induction generator. We use the low rpm and larger generator diameter design. It means the higher costs, but better performance on power production, reliability and over heating problem.

### Direct Connection Design:

The hub directly connected with generator shaft. Generator directly connected with nacelle. Generator shaft directly connected with brake disc. Aeolos optimized design removed the traditional adapter flanges and welding parts. This makes the wind turbine more reliable and more safety.

### Larger Rotor & More Power Output:

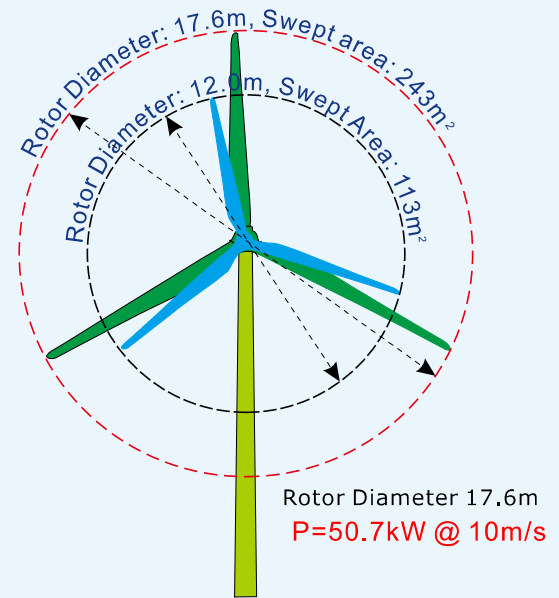
Aeolos H 50kW has the 17.6 m rotor diameter. It will reach the 50kW output at 10 m/s wind speed and there is more power output in low wind speed area. The annual power output is about 158,015 kWh at 6 m/s wind speed.

### IEC 61400-2 Casting Parts:

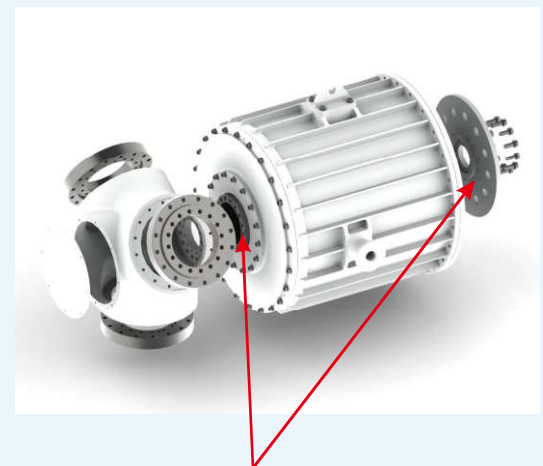
Aeolos-H 50kw hub and nacelle are all casting parts followed by IEC 61400-2 standard. The nacelle and hub were made by EN-GJS-400-LT which is the same material and technology as MW wind turbines. The lifetime design is more than 20 years and could work from -20°C to 50°C. It is more reliable than the welding hub and nacelle.

### Low Maintenance Cost:

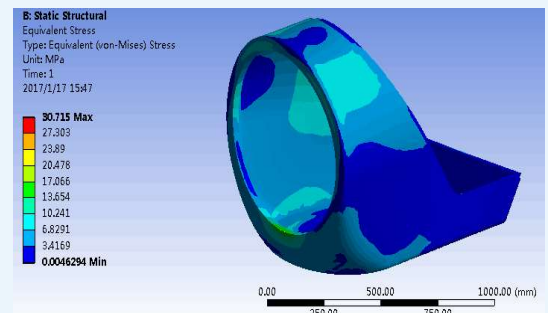
There is auto grease lubricator in the nacelle that will automatically lubricate the yaw bearing, pitch control bearing and other bearings. People could access the nacelle from the tower inside.



Annual Energy Production @ 6m/s  
158,015 (kWh)



Direct Connection Without Flange



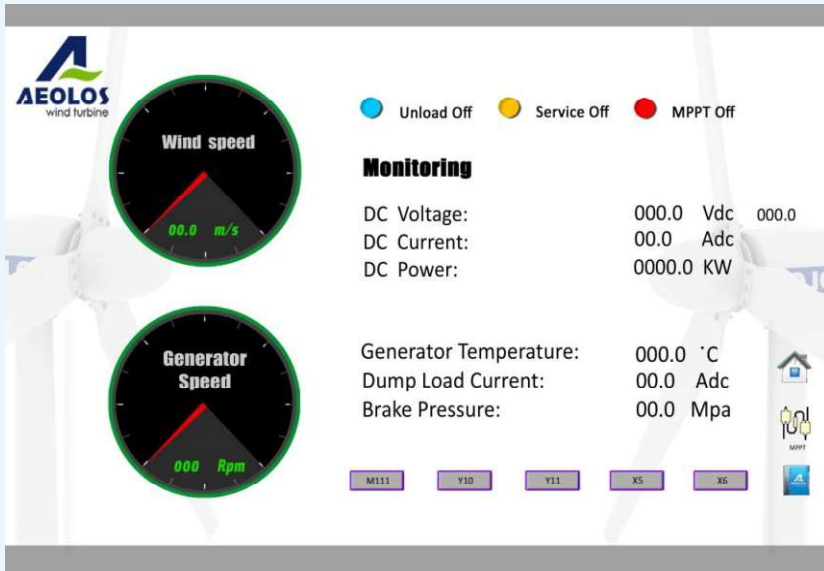
5 YEAR WARRANTY





## Intelligent Control & Remote Monitoring

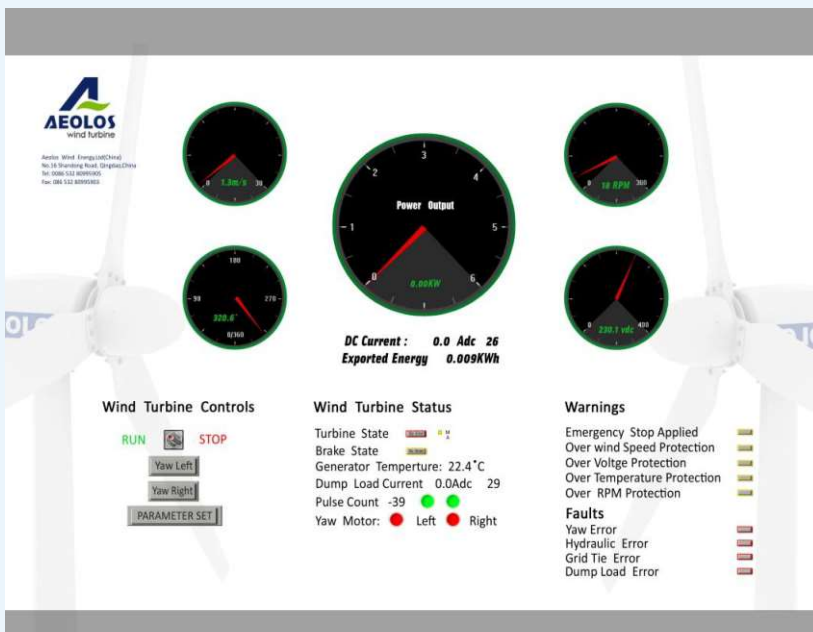
Aeolos employs Programmable logic controller (PLC) and touch screen as the control system. All the operation data like wind speed and power output can be recorded and customer can easily adjust the protection data of wind speed, voltage current and rpm through controller.



Touch Screen



Aeolos provides remote monitoring function to the customers. You can remotely monitor and control the wind turbine operation through wireless or wire internet in home, office, airport and anywhere.



Remote Monitoring Software



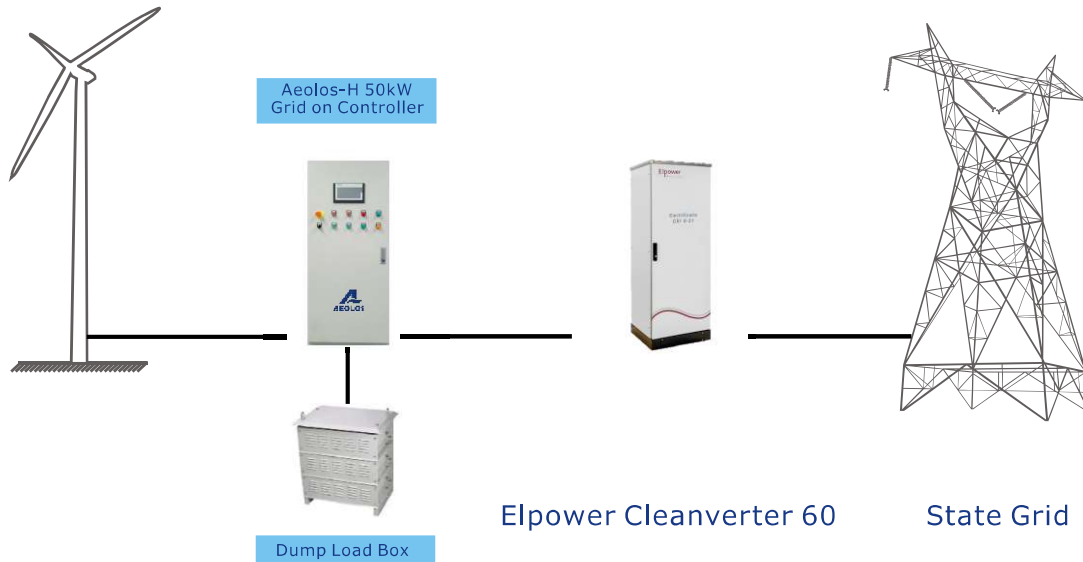




## 50kW Grid on System Wiring Diagram

### Solution I

Aeolos H-50kW wind turbine could work with ELPOWER Cleanverter 60kW grid on inverter which has the CEI 0-21 certificate to connect ENEL grid.



### Solution II

Aeolos-H 50kW wind turbine could match with ABB 2xTROI-27.6-TL-OU-D-W inverter. Aeolos and ABB engineers did many works in house and onsite to ensure the system matching perfectly.

