

windera s

THE NEW FACE OF THE WIND 3,2kW

Designed to combine high performance with safe and reliable operation

- > 0,41 Maximum Power Coefficient certified by Germanischer Lloyd
- > Three levels of redundant braking mechanism
- > Advanced supervision and monitoring centre

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THE NEW FACE OF THE WIND

GENERAL

Configuration	3 blades, Horizontal Axis, UpWind Passive Yaw, Fix Pitch
Reference power ¹	3,2 kW
Diameter	4,36 m
Annual energy yield ²	6.231 kWh
IEC Turbine Class ³	Class III
Cut-in wind speed	3 m/s
Cut-out wind speed	25 m/s
Noise ⁴	49 dB(A)
Nacelle weight	160 kg
Operating temp. range	-20 / 45 °C
Nominal rotation	200 rpm
Design lifetime	20 years
Certification	MCS & ClassNk

GENERATOR

Type	Direct drive permanent magnet synchronous
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CONVERTER

Nominal efficiency	95%
Connection	Singlephase
Protection degree	IP 54 plus aesthetic outer case with UV protection
Adaptive optimum point tracking	Optimized control strategy to maximize production and minimize loads

BLADES

Type	Fiberglass, carbon-fiber, epoxy resin. Winglets at blades' tip
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TOWER

Configuration	Free standing tubular monopole (12 or 18m)
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SAFETY SYSTEMS

Machine control	Braking system when excessive wind speeds are detected
Electrical	Shut down protection system against electrical or mechanical failure
Mechanical	Redundant centrifugal brake against over-speed
No additional braking resistance required	

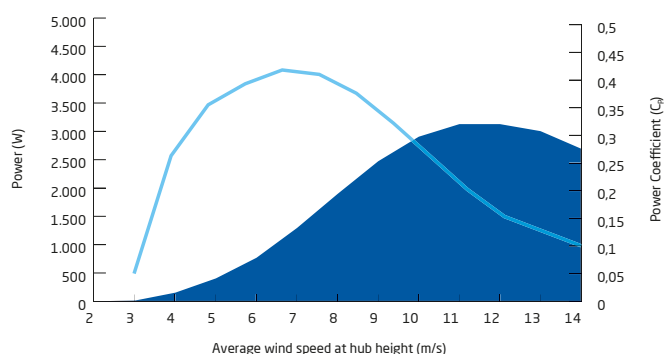
SUPERVISION AND MAINTENANCE

Supervision centre	Remote control based on mobile network communication
Green Monitor	Web application for end user with energy and power statistical data and machine status information
Preventive approach	Identification of maintenance needs according to received data and warning analysis

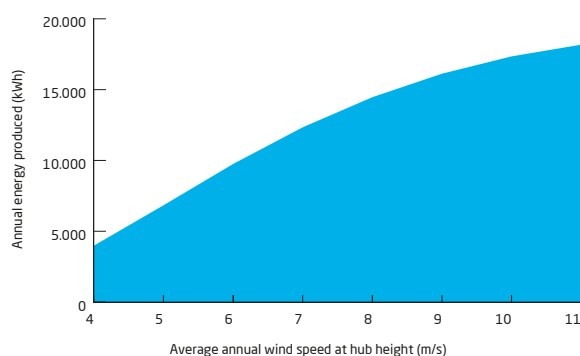


Power & C_p Curves

— Power (W)
— Power Coefficient (C_p)



Annual electricity production⁵



1. Measured at 11 m/s according to MCS and ClassNk.
2. Estimated wind speed at 5 m/s during 1 year period.
3. According to standard conditions. IEC 61400-2
4. At 25 m. distance from rotor centre. Wind speed 8 m/s.
5. Extrapolated according to IEC 61400-12-1.