

Industrial Motors
Commercial &
Appliance Motors
Automation
Digital &
Systems
Energy
Transmission &
Distribution
Coatings

WIND TURBINE AGW 147 / 4.2

Power generation
clean **efficiently and
sustainability**



Driving efficiency and sustainability



Direct-drive permanent magnet wind turbine

Operational data

Model	AGW 147 / 4.2
Rated power	4,200 kW
Wind class (IEC 61400-1)	S ($V_{ave} = 9.0$ m/s; $I_{ref} = 0.14$; $V_{ref} = 37.5$ m/s)

Rotor

Rotor diameter	147 m
Swept area	16,972 m ²
Power regulation	Variable speed with electric drive pitch control

Generator

Type	Synchronous with permanent magnets
Drive train	Direct drive (no gearbox)
Grid connection	Full power converter
Cooling	Thermal fluid
Stator impregnation	VPI (Vacuum Pressure Impregnation)

Converter

Type	Full power converter, type 4 (IEEE)
Frequency	50 Hz or 60 Hz
Power factor ¹⁾	0.95 IND - 0.95 CAP
Cooling	Liquid cooling

Nacelle

Yaw system	Active, driven by electric gear motors
Main brake	Aerodynamic
Secondary brake	Electromechanical
Auxiliary brake	Electromechanical lock pin
Ventilation	Open (standard) for inland environment Closed (optional) for maritime environment

Transformer

Output voltage ²⁾	33 kV or 34.5 kV
Cooling	Passive air cooling

Tower

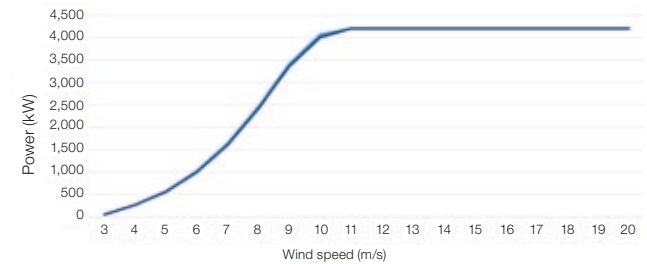
Hub height	120 m (steel) or 125 m (concrete)
Type	Conical tubular in concrete or steel
Nacelle access	Service ladder and lift (optional)

Additional information

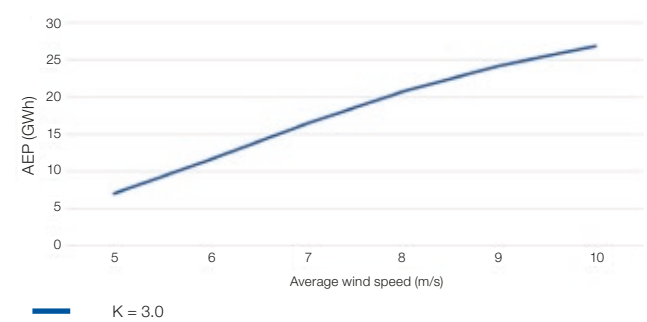
Design service life ²⁾	20 years
Control system	PLC and MPU
SCADA system	Wind Power SCADA
Lightning protection	Built-in in blades, rotor and tower, in compliance with IEC 61400-24
Optional	50/60 Hz, marine environment, dust protection, low temperatures, aerial signaling (painting and lighting), continuous monitoring system (CMS)

Notes: 1) Power factor measured at the low voltage terminals of the step-up transformer of the wind turbine itself.
2) Longer service life subject to site-specific assessment.

Power curve A,B)



AEP curve A,B,C,D)



Notes: A) Wind turbine with 100% availability and 0% losses.
B) Weibull shape factor, $k = 3.0$.
C) Standard air density, $\rho = 1,225$ kg/m³.
D) Annual average wind speed at hub height.



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