

Bonus 450 Turbine Specifications



Rotor Diameter – 37 meters

Tower Height – 40 meters (two sections)

Configuration: - Rotor blades, horizontal axis, upwind, stall-controlled

Operating data:

- Power-on wind speed:	4.5 m/s *
- Power-off wind speed:	28 m/s
- max. wind speed:	57 m/s

Rotor:

- No. of rotor blades:	3
- Diameter:	37 m
- Rotor area:	962 m ²
- Rotor speed:	35 min ⁻¹
- Power regulation:	Constant pitch angle with stall-controls

- Rotor blade:

- Design:	Cantilevered
- Material:	Glass fiber-reinforced Polyester
- Profile chord at the blade root:	1.35 m
- Profile chord at the blade tip:	0.48 m

Electrical System:

- Power factor: 0.96
- Generator
 - Type: Induction generator
 - Rated output: 450 kW
 - Voltage- phases: 480 D - 3 phases

Transmission:

- Gear ratio: 1 : 43
- Design: Three stage
 - 1st stage: Planetary gear
 - 2nd and 3rd stage: spur gear, helical cut

- Generator coupling: Elastics coupling
- Shaft coupling: Elastics coupling

Brake system:

- Service brake: Aerodynamic braking,
Hydraulic actuation through the control system

- Locking brake: Disc brake, hydraulically actuated, can only be
actuated manually

- Emergency brake: Initiation of aerodynamic brakes by the
overpressure valve

Weight:

- Rotor approx.: 6,500 kg
- Nacelle approx.: 16,000 kg
- Tubular tower approx.: 18,000 kg
- Total weight approx.: 40,500 kg