

## 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 <sup>2</sup>
- Rotor speed:	35 min <sup>-1</sup>
- 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
  - 1<sup>st</sup> stage: Planetary gear
  - 2<sup>nd</sup> and 3<sup>rd</sup> 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