



## 25 kW Direct-Drive Wind Turbine

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*Built To Withstand  
The Winds Of Time*

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- Safe and durable
  - Minimal maintenance
  - Superior energy production
  - Quiet operation
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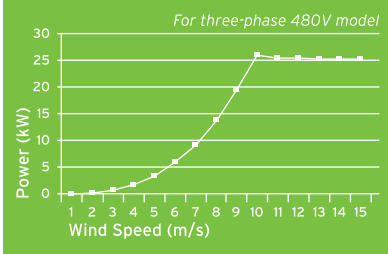
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## 1. WIND TURBINE CHARACTERISTICS

- Turbine type:** Horizontal axis, upwind, active yaw, variable speed, direct-drive generator, active electronic stall
- Applications:** Grid-tied distributed and hybrid diesel power generation
- Design standards:** IEC 61400-2, wind class IIA / AWEA Standard 9.1 - 2009
- Design lifetime:** 20 years minimum (without major component replacement)
- Rated power:** 25 kW @ 11 m/s (25 mph) wind speed
- Cut-in wind speed:** 3,0 m/s (6,7 mph)
- Cut-out wind speed:** 25 m/s (56 mph)
- Survival wind speed:** 59,5 m/s (133 mph)
- Operating temperatures:** -20°C to +50°C (-4°F to +122°F)

## 2. CALCULATED OUTPUT POWER CURVE



## 3. EXPECTED ANNUAL ENERGY PRODUCTION (AEP)

Wind Speed (m/s)	AEP (kWh)
4	27 700
5	49 600
6	73 300
7	95 200
8	113 400

*The energy produced annually by the EO 25/12 will depend on the site conditions.*

(for Weibull K = 2, anemometer and tower height = 24 m, sea level, air turbulence factor = 0)

## 4. CONTROL/ELECTRICAL SYSTEM

- Generator:** Eocycle transverse flux synchronous permanent magnet
- Generator characteristics:** 25 kW @ 90 rpm, 54A continuous duty, 1.15 SF, passively air cooled
- Generator certifications:** UL-1004 and CSA C22.2 No. 100-04 listed
- Power converter & controls:** Eocycle PLC-based utility-interactive unit for power management, turbine control and monitoring
- Power converter characteristics:** 45 kW, 480V, 60Hz, 60A
- User's interface:** LCD touch screen
- Power converter certifications:** UL-1741 and CSA C22.2 No. 107.1-01 listed
- Lightning protection:** Blade-integrated mesh, lightning rod on nacelle and electrical surge protectors

## 5. ROTOR AND BLADES

- Rotor diameter:** 11,7 m (38,4 ft)
- Rotor swept area:** 107,5 m<sup>2</sup> (1 157 ft<sup>2</sup>)
- Hub type:** Fixed pitch
- Number of blades:** 3
- Blade length:** 5,6 m (18,4 ft)
- Blade material:** Epoxy/glass fiber composite

m/s	3	4	5	6	7	8	9	10	11	12	13	14	15
km/h	10,8	14,4	18	21,6	25,2	28,8	32,4	36	39,6	43,2	46,8	50,4	54
mph	6,7	8,9	11,2	13,4	15,6	17,9	20,1	22,4	24,6	26,8	29,1	31,3	33,6

## 6. BRAKING SYSTEM

- Normal shutdown:** Generator stall, yaw assisted
- Emergency shutdown:** Generator stall with resistors, yaw and disk-brake assisted
- Emergency rotor brake type:** Fail-safe hydraulic disk brake

## 7. YAW SYSTEM

- Type:** Active electromechanical
- Controls:** PLC with wind direction/speed sensors, automatic cable unwind

## 8. TOWERS

- Type:** Tubular hot-dip galvanized monopole with work platform, climbing step bolts and safety climbing cable
- Heights:** 24, 30 and 36 m (80, 100 and 120 ft)

## 9. STANDARD WARRANTY

5 years on wind turbine and towers

## 10. OPTIONS

- Control/Electrical system:** 3-phase 600 VAC, single-phase 240 VAC, web-based turbine monitoring and reporting system
- Nacelle:** Cold weather package, FAA L-810 steady burning red LED obstruction light
- Tower:** Outside paint, ladder, tilt towers

Specifications subject to change without notice



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