



25 kW Direct-Drive Wind Turbine

*Built To Withstand
The Winds Of Time*

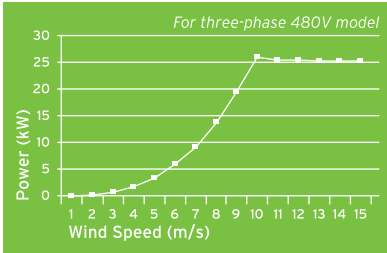
- Safe and durable
 - Minimal maintenance
 - Superior energy production
 - Quiet operation
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Municipalities - Vineyards**

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 ² (1 157 ft ²)
Hub type:	Fixed pitch
Number of blades:	3
Blade length:	5,6 m (18,4 ft)
Blade material:	Epoxy/glass fiber composite

Conversion Chart

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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