

General

Type	Horizontal Axis, Upwind
Rated power	25kW
Model	P12-25
Design Class	IEC SWT Class II
Design Standard	IEC 61400-2
Cut-in Speed	2.7m/s (6.0 mph)
Rated Speed	10.0m/s (22.4 mph)
Cut-out Speed	25m/s (55.9 mph)

Design Class

IEC Class II Standard	Air density 1.225kg/m ³ , Avg annual wind below 8.5m/s 50 yr peak gust below 59.5 m/s
-----------------------	--

Generator

Type	Permanent Magnet
Rated Power	25kW, 3 Phase
Voltage	460VAC

Pitch System

Type	Fixed Pitch
Drive	Not Applicable

Yaw System

Type	Active
Drive	Hydraulic
Yaw Bearing	Ball Bearing

Power Inverter

Type	Variable Frequency Drive AC/DC
------	-----------------------------------

Power Converter

Type	DC/AC Pulse-width modulated IGBT frequency converter
Voltage	230VAC - (1) or 460VAC - (3)
Frequency/Phase	60Hz or 50Hz/ (1) or (3)

Environmental Limits

Survival Wind Speed	59 m/s (132 mph)
---------------------	------------------

Rotor

Diameter	12m (39.4ft)
Material	Fiberglass/Resin
Operation RPM	75 RPM

Drive Train

Type	Direct Drive
------	--------------

Braking Systems

Emergency Back Up Speed Regulation	Spring Applied Hydraulic Caliper Disc Brake
GridLoss Power/DC Bus over voltage	Dynamic Resistive Brake
Emergency Shutdown	FailSafe Caliper Disc Brake

Controller

Processor	PLC
User Interface	HMI
Communications	Ethernet
Monitoring System	Web Based

Speed Regulation

Generator	Torque Control from Drive
-----------	---------------------------

Tower

Type	Tubular
Hub Height	21.3m (70ft) 30.5m (100ft) 36.6m (120ft)

Lightning Protection

Standard	Surge Suppression on Generator
----------	--------------------------------

Weight

Nacelle	Around 2261kg (4987 lbs)
---------	--------------------------

Temperature Conditions

Standard Operation	-10°C to 40°C (14°F to 104°F)
Extreme Range	-25°C to 50°C (-13°F to 122°F)

Noise Performance

Apparent Noise Level	50-55 db at 30m (100ft)
----------------------	-------------------------