

TECHNICAL DATA

CARTER WIND TURBINE MODEL 500

Rotor

| | |
|------------------|----------------------------|
| Type | Horizontal Axis / Downward |
| Number of Blades | 2 |
| Area | 11,310 ft ² |
| Diameter | 120 ft |
| Speed | 10 - 45 rpm |
| Type of Hub | Teetering Hub |
| Tilt Angle | 2° |
| Pre-cone | 8° |

Blades

| | |
|--------------|--|
| Material | Fiberglass Composite |
| Blade Design | Non-linear Twist & Taper, Custom Airfoils |
| Blade Pitch | Fixed – Except Shutdown |

Transmission

| | |
|------------------|---------------------|
| Type | Two Stage Planetary |
| Ratio (at 60 Hz) | 1 : 40 |

Generator

| | |
|-------------|-----------------|
| Type | Induction – AC |
| Rated Power | 500 kW |
| Voltage | 480 V, 60 Hz |
| Speed | 1836 rpm, 60 Hz |

Tower

| | |
|---------------------|----------------------------------|
| Type | Tubular / Tilt-up |
| Number of Guy Wires | Two Sets of 4 |
| Height | 149 - 260 ft |
| Foundation | 30 - 40 yd ³ concrete |

Performance

| | |
|-----------------------------------|---------|
| Max Power | 500 kw |
| at Windspeed | 32 mph |
| Cut-in Windspeed | 4.0 mph |
| Cut-out Windspeed (adjustable) | 60 mph |
| Design Max Windspeed | 160 mph |

Control System

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|-----------|---|
| Type | Aerodynamic Stall Controlled |
| Overspeed | Deep Stall, by Twisting the Spar & Increasing Blade Pitch. Brake Backup |

Yaw Drive

| | |
|------|--|
| Type | Active Outside ±15° Window, Inside Window Free Yaw with Dampening |
|------|--|

Shell

| | |
|--------------|----------------------|
| Material | Fiberglass Composite |
| Size (LxWxH) | 16 x 4 x 4.5 ft |

Weights

| | |
|---|-------------------|
| Blades/Hub Assembly | 3,500 lbs |
| Tower/Gin Pole | 27,800 lbs |
| Nacelle | 9,800 lbs |
| Miscellaneous (control box, guy wires, etc.) | 8,900 lbs |
| Total Weight | <u>50,000 lbs</u> |

Safety Devices

- Manual Shut-Off
- Electronic and Mechanical Overspeed Shutdown
- Deep Stall Braking Independent of Power Supply
- Emergency Braking and Parking by Means of an Integrated Spring-Loaded Disk Brake