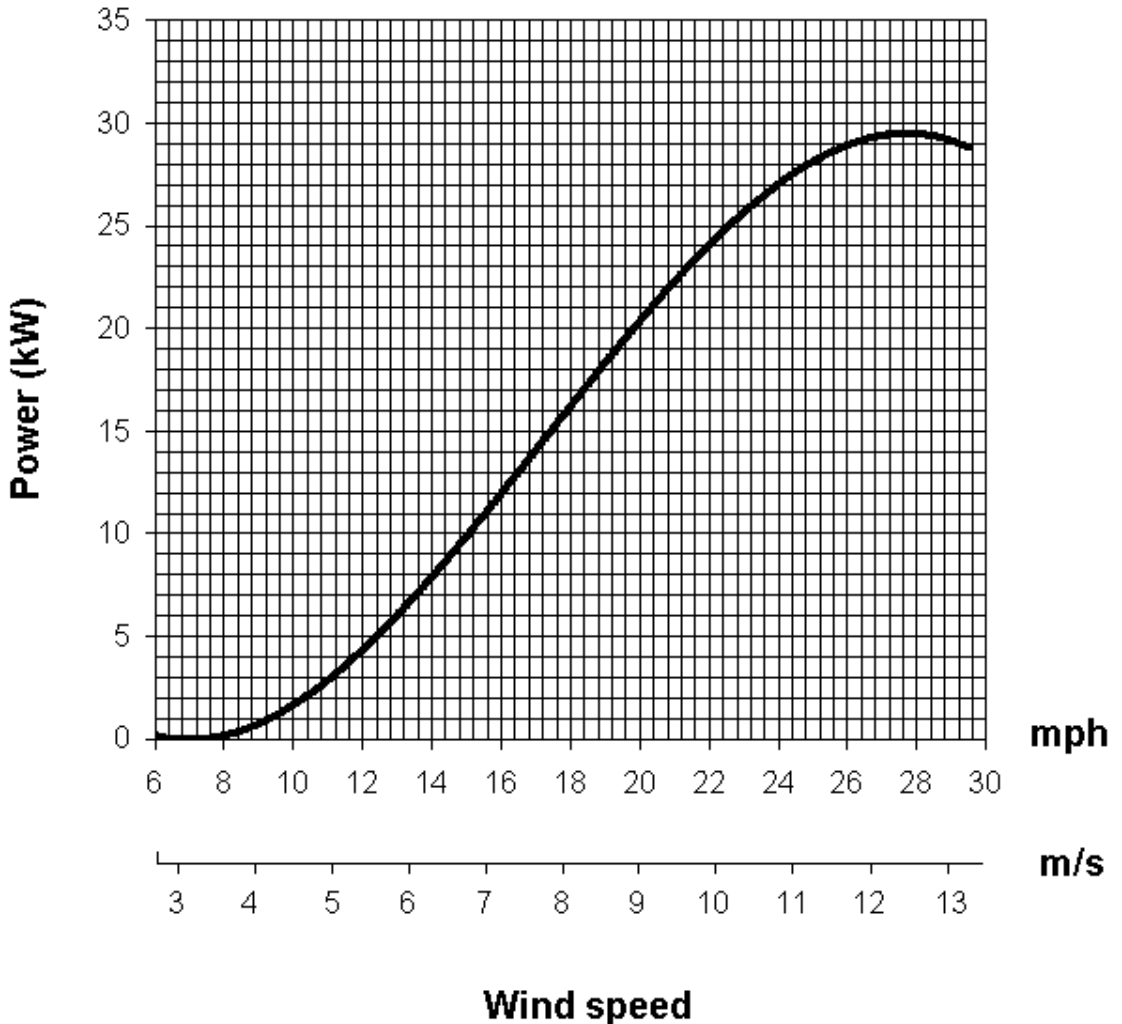




The power curve for the 30kW Wind Eagle-30 is based on 10-minute time intervals averages, in accordance with AWEA and UL small wind turbine guidelines. Field operations were measured and recorded on NRG Systems equipment between July 2003 and July 2004.

### Cygnus Wind Eagle-30



# Wind Eagle 30 kW

## Rotor

|            |                             |
|------------|-----------------------------|
| Material   | Fiberglass reinforced epoxy |
| Cone angle | 12°                         |
| Diameter   | 14 m                        |
| Swept Area | 153.9 m <sup>2</sup>        |
| Length     | 6.6 m                       |

## Breaking System

|             |                               |
|-------------|-------------------------------|
| Aerodynamic | Full blade stalled controlled |
| Mechanical  | none                          |
| Fail safe   | Centrifugal switch            |

## Gear Box

|                 |                   |
|-----------------|-------------------|
| Type            | 2 Stage planetary |
| Ratio           | 20:01             |
| Number of steps | 2                 |

## Generator

|                  |                             |
|------------------|-----------------------------|
| Type             | Induction                   |
| Rated Power      | 30 kW                       |
| Voltage          | 230 / 460 VAC               |
| Speed            | 1200 rpm                    |
| Number of poles  | 6                           |
| No. of Phases    | 3                           |
| Insulation Class | F                           |
| Protection       | Shunt trip circuit breakers |
| Coupling         | Direct drive                |
| Current          | 86 / 43 amps                |

## Performance

|             |       |
|-------------|-------|
| Rated Power | 30 kW |
|-------------|-------|

## Yaw Drive

|      |                       |
|------|-----------------------|
| Type | Passive free movement |
|------|-----------------------|

## Tower

|                    |                         |
|--------------------|-------------------------|
| Type               | Tubular, guyed, tilt-up |
| Number of sections | 4                       |
| Height             | 35.8 m                  |
| Material           | 65 ksi yield steel      |
| Assembly           | Tapered and telescoping |
| Ladder type        | None - tilt-up / down   |
| Safety system      | Tower tilts up and down |
| Surface protection | Galvanizing             |

## General Data

|                |               |
|----------------|---------------|
| Survival speed | 62.5 m/s      |
| Hub height     | 36.5 m        |
| Rotor speed    | 60 rpm        |
| Voltage        | 230 / 460 VAC |
| Frequency      | 60 Hz         |

## Weight

|              |                 |
|--------------|-----------------|
| Rotor        | 410 lbs         |
| Tower        | 4415 lbs        |
| Nacelle      | 1590 lbs        |
| <b>Total</b> | <b>6415 lbs</b> |



Over the past 20 years, approximately 800 Wind Eagle type turbines were manufactured and deployed with rated power outputs of 25 kW and 300 kW. The development of the Wind Eagle technology resulted in two U.S. Patents, each with a large number of claims.

Wind Eagle Systems recently completed the development of a 30 kW wind turbine generator, and is upgrading the 300kW wind turbine generators. The turbine is modeled after the Wind Eagle baseline and incorporated numerous features that further enhance performance and reliability, and reduce the cost of energy.

USA WIND & SOLAR Inc. is committed to bringing the proven Wind Eagle today's technology to customers. With its recent design improvements, the Wind Eagle range of Made in USA wind turbines is well suited for many applications.

Applications for the Eagle small turbine product line of 30 kW and 50 kW systems include grid-connected distributed power generation for residential, agricultural and small business markets in low and high wind regimes. With wind speeds as low as 12 mph and as high as 20 mph, the Cygnus wind turbines may be ideal for your site.

Wind Power Solutions Offered by :

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