

Wocawson Energy Project Environmental Impact Assessment  
Wocawson Energy Limited Partnership  
September 2018

# Appendix A

## Turbine Model Datasheets

ENERCON  
3 MW PLATFORM

**E-138 EP3**

3,500 kW / IEC/EN IIIA

**E-126 EP3**

3,500 kW / IEC/EN IIA

THE NEW 3 MW SERIES

# ENERCON 3 MW PLATFORM

Compact. Efficient. Powerful.



[www.enercon.de](http://www.enercon.de)



**ENERCON**  
ENERGY FOR THE WORLD

# 3 MW PLATFORM

## TECHNICAL DATA

### PERFORMANCE INCREASE IN 3 MW CLASS

The E-126 EP3 and the E-138 EP3 are two 3.5 MW WECs for wind classes IIA and IIIA which have evolved from the 3 MW platform. Thanks to a significant increase in output and efficiency, they provide a convincing overall performance in this high-volume segment. An annual yield of 14.5 million kWh is forecast for the E-126 EP3 (HH 135 m) at typical wind class IIA locations (8.0 m/s). For the E-138 EP3 (HH 131 m) – a completely new type of WEC in the 3 MW platform portfolio, which up until now did not include a low-wind converter – an annual yield of more than 13.2 million kWh is estimated at typical wind class IIIA locations (7.0 m/s).

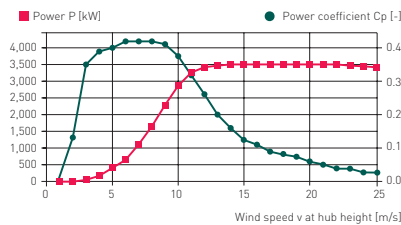
### E-126 EP3

**Rated power:** 3,500 kW  
**Rotor diameter:** 127 m  
**Hub height (m):** 86 / 116 / 135  
**Wind class (IEC):** IEC/EN IIA  
**Rotational speed:** variable; 4.4 - 11.8 rpm  
**Cut-out wind speed:** 24 - 30 m/s

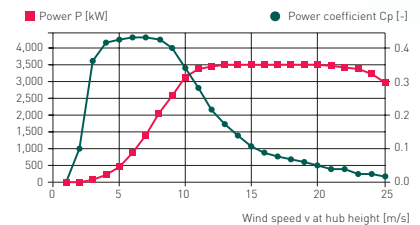
### E-138 EP3

**Rated power:** 3,500 kW  
**Rotor diameter:** 138.6 m  
**Hub height (m):** 81 / 111 / 131 / 160  
**Wind class (IEC):** IEC/EN IIIA  
**Rotational speed:** variable; 4.4 - 10.8 rpm  
**Cut-out wind speed:** 22 - 28 m/s

### CALCULATED POWER CURVE E-126 EP3\*



### CALCULATED POWER CURVE E-138 EP3\*



\* The above information is without obligation. The information on the official data sheets apply (available from ENERCON Sales).

### ROTOR BLADE

- New rotor blade design for shorter production times and improved transportation
- Flatback profile optimised for production and transportation
- Trailing edge serrations for minimum noise emission
- Use of Impact Absorption Layer technology (IAL) for durable erosion protection

### HUB

- Separate main bearing unit for a more compact design
- Optimised for maintenance thanks to easy hub access
- Integration of electrical components protected in the hub

### GENERATOR

- Generator division for optimised logistics
- Short production times thanks to use of pre-fabricated aluminium form-wound coils
- Fully enclosed for optimum protection against external influences

### MACHINE HOUSE

- Compact design optimised for transportation



THE ENERCON 4 MW PLATFORM

# E-141 EP4\_ 4.2 MW

Smart. Efficient. Silent.



[enercon.de/e141-ep4](http://enercon.de/e141-ep4)



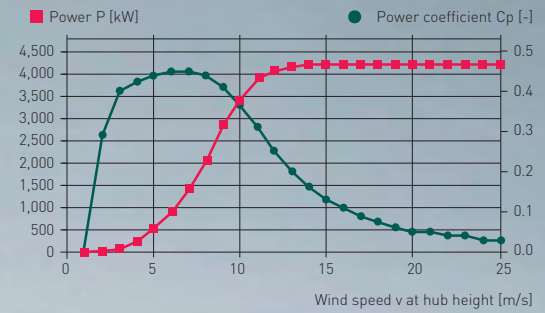
**ENERCON**  
ENERGY FOR THE WORLD

# E-141 EP4\_ 4.2 MW

## New ENERCON specialist in 4 MW platform for inland sites

With their new E-141 EP4 / 4 200 kW turbine, ENERCON is offering a customized solution in the 4 MW segment for low wind inland sites. Tall towers and a larger rotor diameter allow for increased annual revenue and low sound power levels.

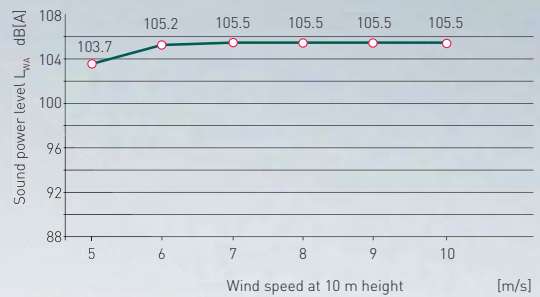
Calculated power curve E-141 EP4 / 4.2 MW



### Technical details

- ~ Rated power: 4 200 kW
- ~ Rotor diameter: 141 m
- ~ Hub height: 129 / 159 m
- ~ Wind class (IEC): IEC/EN IIIA
- ~ Rotational speed: variable, 4 - 10.6 rpm
- ~ Cut-out wind speed: 28 - 34 m/s

Sound power level E-141 EP4 / 4.2 MW - 129 m hub height



### Nacelle

- ~ Modular nacelle design to reduce production, transport and assembly time
- ~ Use of premium quality cast components
- ~ Simplified logistics due to the use of standard containers

### Generator

- ~ Maximum running smoothness, minimised sound emission and maximum efficiency
- ~ 2-part generator design optimized for production and logistics
- ~ Advanced cooling concept with 35% less energy loss in cooling system
- ~ No use of rare earth elements

### Rotor blade

- ~ Innovative aerodynamic design for maximum yield in the low wind range
  - ~ Significant reduction of sound emissions by using Trailing Edge Serrations (TES)
  - ~ 2-part blade design optimized for production and logistics
  - ~ Significant increase in yield at cold climate sites
    - ~ Excellent lightning protection system
    - ~ Yield optimized flat-back profile
    - ~ Minimal structural loads

**4 MW  
PLATFORM**



**E-141 EP4**  
Ø 141 m  
IEC IIIa



**E-126 EP4**  
Ø 126 m  
IEC IIa

