



ENDURANCE X SERIES

Endurance X33 225 kW

Highly productive Class II turbine

The **Endurance X33** provides a very competitive cost of energy and significantly out-produces comparable turbines.

In the sub 250kW class the **Endurance X33** has the largest rotor size of all IEC Class IIA turbines (average wind speed less than 8.5 m/s).

At the heart of the **Endurance X33** is the time-tested X Series design. With a proven performance record spanning over 25 years, the original design has been refined with hundreds of engineering improvements and technical advances.

The X33 is ideal in rural locations for businesses in dairy, crop and animal husbandry; for schools and public buildings and a range of industrial applications.

The **Endurance X33** stands out among comparable turbines.

ENDURANCE X33 PERFORMANCE ADVANTAGES

- > VERY LOW COST OF ENERGY
- > IMPROVED ENERGY PRODUCTION
- > STANDS OUT AMONG COMPARABLE TURBINES
- > PROVEN DESIGN



DESIGNED
IN DENMARK



ENGINEERED
BY ENDURANCE



BUILT IN BRITAIN



FOUR NEW
X SERIES
CONFIGURATIONS

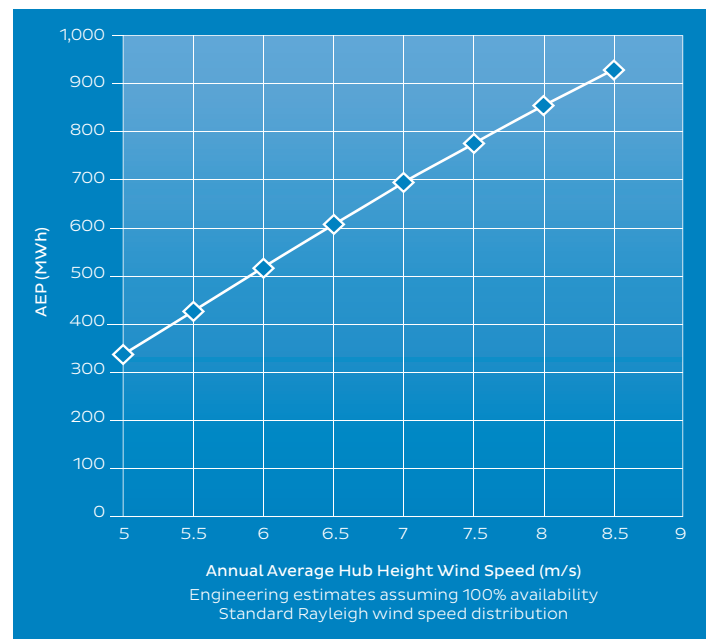
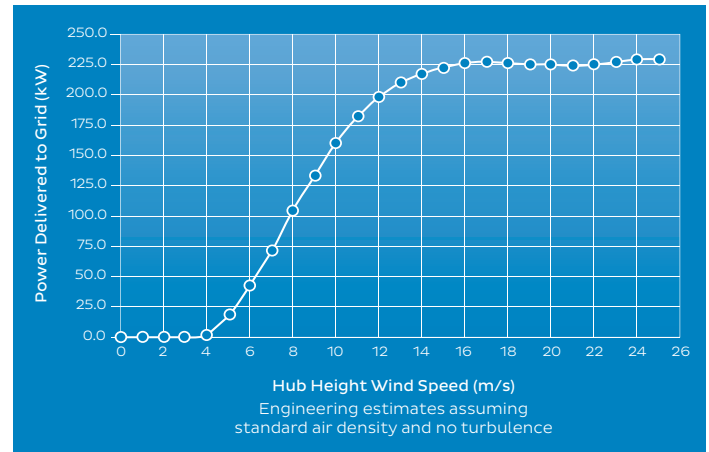
Endurance[®]
wind power



ENDURANCE X SERIES

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X Series Specs	X33 225kW
Configuration	Three blade, horizontal axis, upwind
Rated Power (kW)	225
Application	Direct Grid Tie
Rotor Speed (RPM)	30.8
IEC 61400-1 Turbine Class	IIA
Maximum Average Wind Speed (m/s)	8.5
Survival Wind Speed (m/s / mph)	57.5 / 133
Cutout Wind Speed (m/s)	25
Rotor Diameter (m)	33.1
Swept Area (m ²)	860
Blade Material	Fiberglass composite
Power Regulation	Stall control
Generator Type	Asynchronous, Induction
Rated Capacity (kW)	225
Configuration	3-phase, 400 VAC, 50 Hz
Main Brake System	Turnable Blade Tips
Secondary System	Fail-Safe mechanical brake
Automatic Shutdown triggered by	High wind speed, grid failure, over-speed, all other fault conditions
Controls	Programmable logic controller (PLC) ERIC™ Endurance Remote Interface Centre
Available Hub Heights (m)	30.5 and 40.2
Tower Type	Free Standing Monopole, Internal Tower Ladder, Safe climbing system
Warranties	Standard – 5 year parts and labour Optional - Performance warranties on completion of manufacturer testing



Annual Average Hub Height Wind Speed (m/s)	Annual Energy Production (MWh)
5.0	338
5.5	428
6.0	518
6.5	608
7.0	695
7.5	778
8.0	856
8.5	929

DISCLAIMER: while statements made regarding the performance of Endurance products and comparisons to other manufacturers' equipment are based on the cited data and the information of Endurance at the time of publishing, such data, information, test conditions and other factors may change at any time without notice, and therefore Endurance does not represent or warrant that any such statements are necessarily accurate.

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