Vestas®

V52
850 kW

Wind. It means the world to us.™

V52-850 kW

Where performance meets economy

The V52-850 kW is one of the industry's most reliable turbines in the kW range – a high-performing and versatile turbine suitable for high and medium wind sites.

With more than 3,700 of these turbines erected around the globe, the V52-850 kW is a tried-and-tested piece of technology – rigorously proven in the field, robustly constructed and with an enviable track-record.

Investors can be confident its easily transportable design features make it an ideal choice for remote areas or sites with challenging access.

Efficient technology extracts maximum energy

The efficient generator harvests maximum energy from slow or variable rotations, storing excess energy in rotational form to maximise the potential power of gusty conditions. The turbine rotor speed can vary between 14 and 31rpm to amplify the power output across a range of wind conditions.

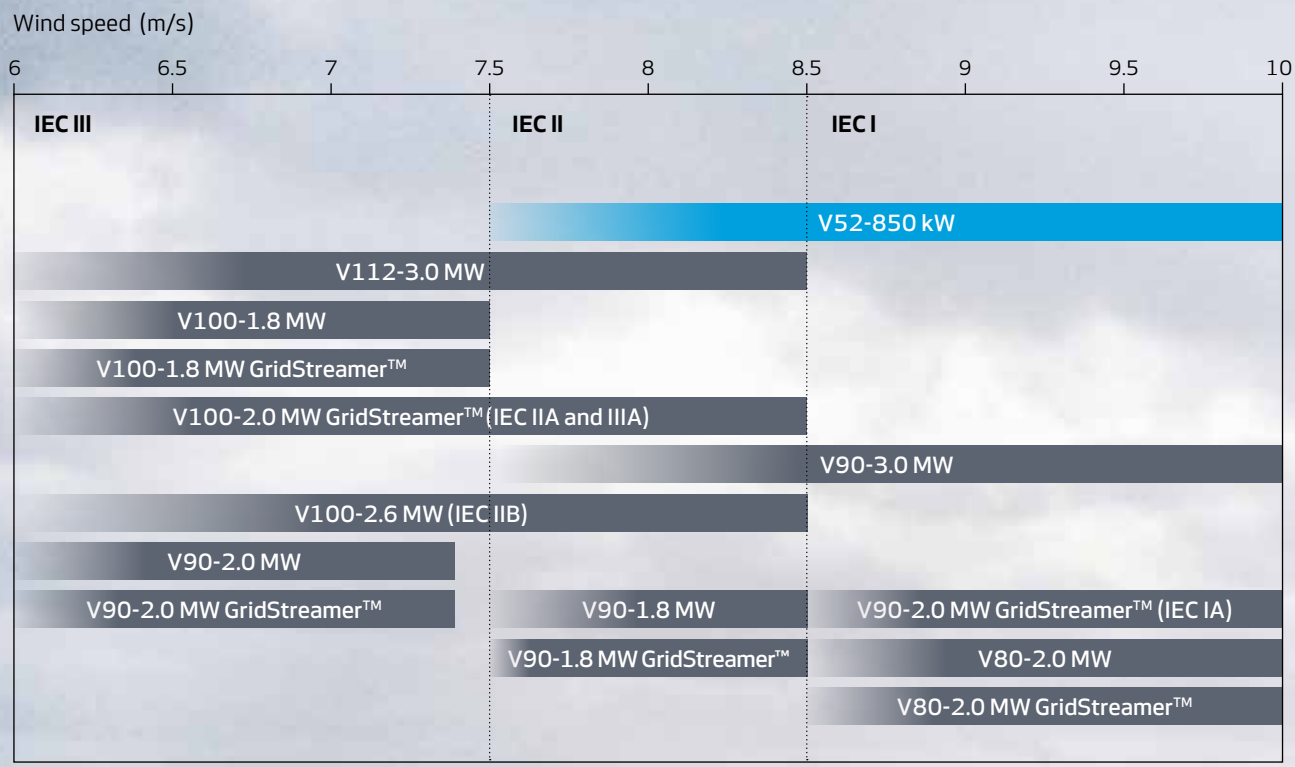
Lower peak loading reduces strain on the gearbox, blades and tower, helping to keep breakdowns and maintenance periods to a minimum and delivering a greater return on investment.

Wind. It means the world to us.™ Wind is all we do. We are relentlessly committed to the success of wind as a source of energy for the world, providing everything you need to succeed in your wind power ambitions.

Peak Performance for medium and high wind sites

Proven technology optimises output across the **wind spectrum**

The V52-850 kW is a reliable investment choice, ensuring maximum yield from IEC IIA and IEC IA medium and high wind speed locations.



- – 52 meter rotor diameter
- – 850 kW rated power

Tried-and-tested technical innovations to power your **investment**

Dependable blade technology

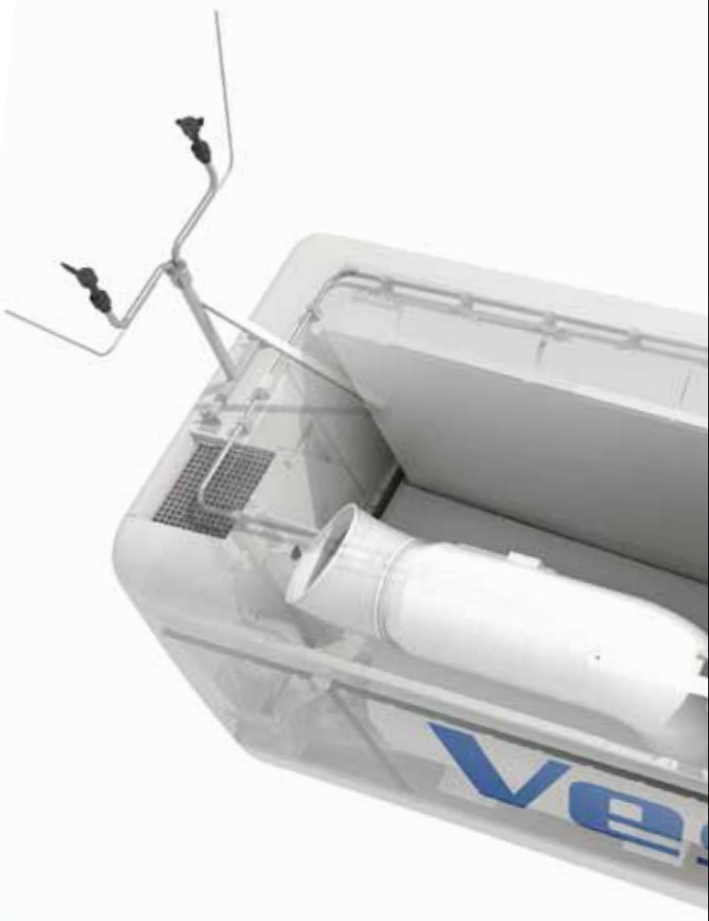
To harvest the maximum energy output from a site, your turbine blades must be able to react to changing wind patterns. The microprocessors in our unique pitch regulation system constantly adjust the angles of the blades to suit the prevailing wind. The same system also keeps audible sound levels within local regulations, widening the scope of sites appropriate for a wind farm. Six different tower heights add further flexibility to the V52-850 kW, making it equally suitable for both populated and remote sites.

The technology used in the V52-850 kW – including the slim blade design – is also used in several of our other turbines. All key components have been rigorously tested in-the-field and across thousands of existing installations – so you can be sure of dependable and productive technology.

Cheaper to transport, quicker to install

The light weight of the V52-850 kW minimises construction and transportation costs. Inspired by the success of the V52-850 kW, similar weight regimes have been rolled out across other turbines in our range, allowing us to further optimise our installation processes.

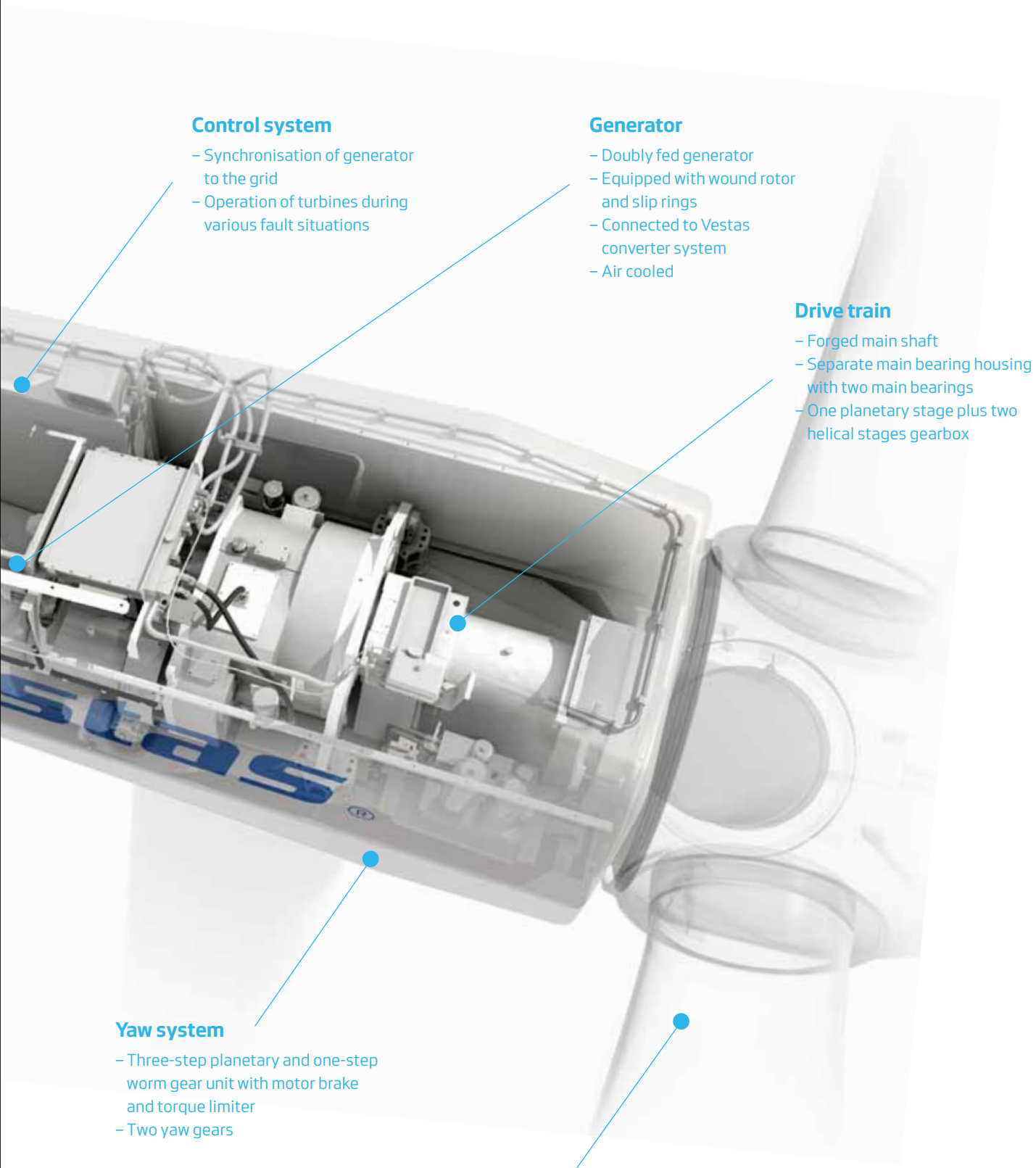
The V52-850 kW features a compact style of blade transportation which allows the safe transportation of three blades at one time using existing trucks and cranes. This makes installation quicker and minimises transportation costs.



Designed for reliability and **high-performance**

Advanced OptiSpeed® technology for peak performance

Our V52-850 kW turbines feature OptiSpeed® generator to vary rotor speeds between 14 and 31 rpm, automatically responding to the prevailing wind. OptiSpeed® boosts annual energy production by exploiting the rotations from slow and variable conditions and storing the excess energy. With rapid synchronisation, reduced harmonic distortion and less flicker, it ensures a better quality power output, consistently keeping sound levels and component strain to a minimum.



Control system

- Synchronisation of generator to the grid
- Operation of turbines during various fault situations

Generator

- Doubly fed generator
- Equipped with wound rotor and slip rings
- Connected to Vestas converter system
- Air cooled

Drive train

- Forged main shaft
- Separate main bearing housing with two main bearings
- One planetary stage plus two helical stages gearbox

Yaw system

- Three-step planetary and one-step worm gear unit with motor brake and torque limiter
- Two yaw gears

Blade

- Glass fibre reinforced epoxy
- Slim blades with efficient wind utilisation

VestasOnline® Business – putting you in **control**

As a valued customer, you'll benefit from VestasOnline® Business, our state-of-the-art Supervisory Control and Data Acquisition (SCADA) management system specifically designed for modern wind power plants.

The system allows you to control your wind turbines in the same way you would control a conventional power plant, including an extensive range of monitoring and management functions. With VestasOnline® Business you can optimise production levels, monitor performance and produce detailed, tailored reports from anywhere in the world.

Meanwhile, the system's power plant controller provides active and reactive power regulation, power voltage and voltage control.

Surveillance, maintenance and service

Maximising your turbine's uptime, production and availability is crucial for generating the highest possible return on your investment. That is why we provide customers with 24/7 monitoring, performance reporting and predictive maintenance systems – to optimise output and ensure every turn of the blades is earning you the maximum return on investment.

Our SCADA system helps ensure that power production is uninterrupted and that operational and maintenance expenses are carefully controlled. Predicting when critical components are most likely to break down is essential to this effort, avoiding costly repairs and unscheduled maintenance.

At Vestas, we understand that making the most of your investment means capturing the maximum amount of available wind energy. Our Active Output Management® (AOM) system, based on more than three decades of industry experience, provides the final assurance you need for business case certainty.

AOM incorporates detailed plans for servicing, online monitoring, equipment optimisation and troubleshooting. Importantly, it also includes a competitive insurance scheme tailored to suit your needs.

Some customers are more risk-tolerant than others. For those seeking complete peace of mind we offer a full-availability guarantee, paying compensation if the turbine fails to meet agreed uptime targets.

+3,700

More than 3,700 installations of the V52-850 kW worldwide strengthen your business case.

V52-850 kW
Facts and figures

POWER REGULATION pitch regulated with variable speed

OPERATING DATA	
Rated power	850 kW
Cut-in wind speed	4.0 m/s
Rated wind speed	18 m/s
Cut-out wind speed	25 m/s
Re-cut in wind speed	20 m/s
Wind class	IEC IA and IEC IIA
Operating temperature range	standard range: -20 °C to 40 °C low temperature option: -30 °C to 40 °C

ROTOR	
Rotor diameter	52 m
Swept area	2,124 m²
Nominal revolutions	26 rpm
Operational interval	14.0 - 31.4 rpm
Air brake	full blade feathering

ELECTRICAL	
Frequency	50/60 Hz
Generator type	four-pole doubly fed generator

GEARBOX	
Type	one planetary stage and two helical stages

TOWER	
Type	tubular steel tower
Hub heights	44 m, 49 m, 54 m, 55 m, 65 m and 74 m

BLADE DIMENSIONS	
Length	25 m
Max. chord	2.3 m

NACELLE DIMENSIONS	
Height for transport	2.8 m
Length	6.68 m
Width	2.24 m

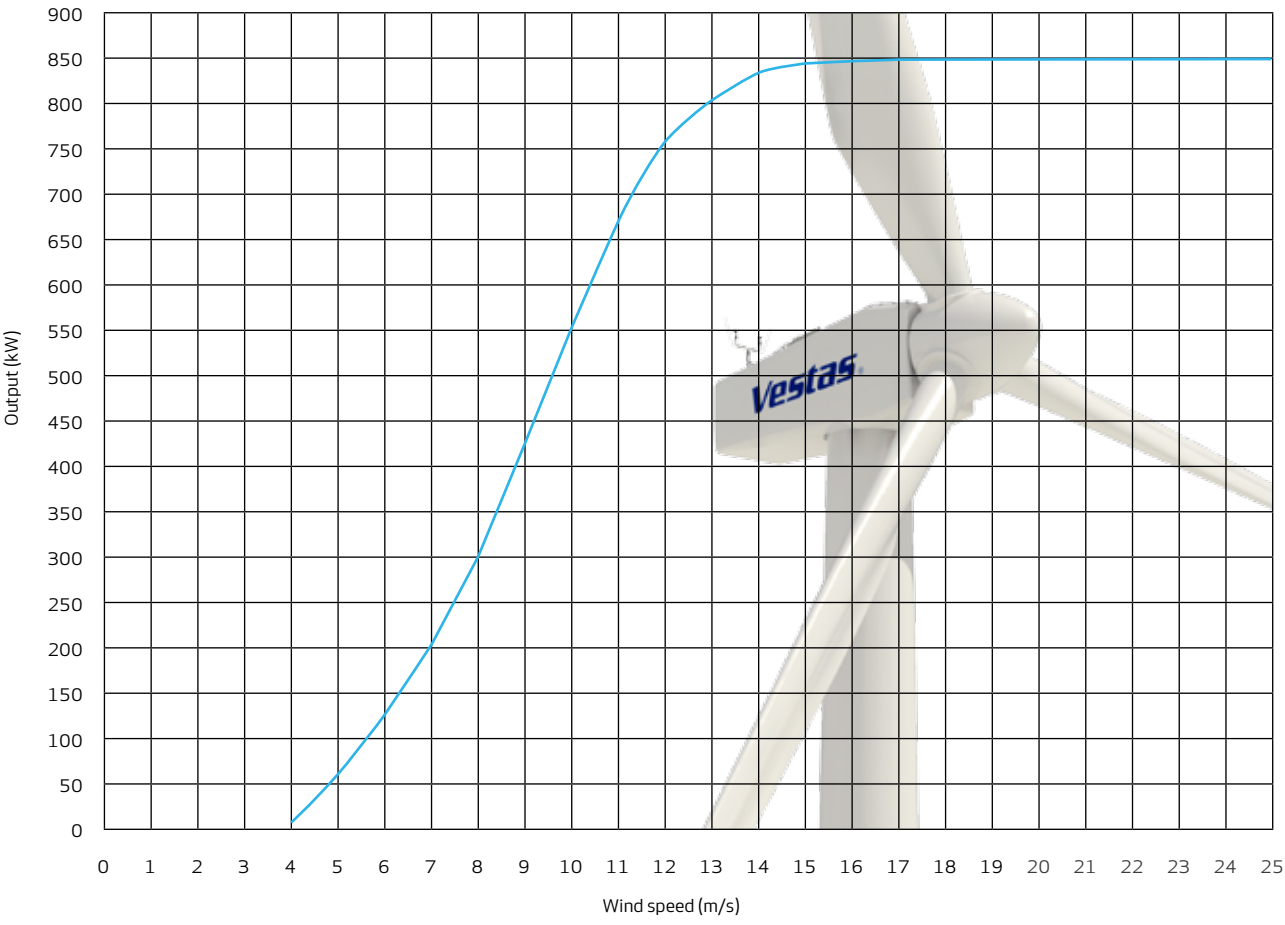
HUB DIMENSIONS	
Max. width	2.24 m
Length	2.7 m

+20,000

committed, highly-trained employees around the globe are always ready to help in any aspect of wind power production.

POWER CURVE FOR V52-850 kW

Noise reduced sound power modes are available



Vestas Wind Systems A/S
Alsvej 21 . 8940 Randers SV . Denmark
Tel: +45 9730 0000 . Fax: +45 9730 0001
vestas@vestas.com . vestas.com

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