

UPGRADES MADE BY NORDEX

Vortex Generators

As the manufacturer, we know your turbines best. With our **Upgrades made by Nordex** we provide individually tailored retrofits. These upgrades improve the performance, the availability and the safety of your turbines, helping you to achieve even larger yields.

➤ Brief technical description

Vortex Generators optimise the aerodynamics of the rotor blades and increase the power output of the wind turbine.

At mid wind speeds, the premature separation of the air flow in the root area of the rotor blades leads to a sub-optimal power performance. The reason for this is the design compromise, which wind turbine manufacturers have to make, in order to reach a balance between optimum aerodynamics, technical feasibility and efficiency. **Vortex Generators** exploit the resulting potential to improve the aerodynamics.

The **Vortex Generators**, which are individually adapted to each rotor blade type, are installed on the top side of the rotor blade. The air flow is stabilised by the generation of small vortexes in the boundary layer air flow, which delays stall. The resulting increased drag on the rotor blades increases the power output of the wind turbine.

Due to their reliability and rapid on-site assembly, **Vortex Generators** are an established and well-researched method for aerodynamically efficient rotor blade optimisation in the partial load range.

This upgrade is available for our N100 Gamma generation turbines.



➤ Benefits

- Increased annual energy yield of approximately 1.5%
- High weather resistance thanks to high-quality materials, a high service life and long-lasting adhesion
- Quick and easy implementation