

L136 4.0-4.5MW

The ultimate onshore wind turbine

The L136 is a 4.0-4.5 MW wind turbine based upon the same design principle as our successful L100 platform. The L136-4.5MW was designed for IEC class IIa locations and thus distinguishes itself from other wind turbines of this size that usually fall within the IEC-III class. The robust design makes the L136-4.5MW suitable for locations with high turbulence and significant differences in vertical *wind shear*. This makes the L136 the best wind turbine for coastal locations with severe wind conditions, but also for inland locations where buildings or forestation create a great difference between wind speeds at maximum and minimum tip height.

Experience

Lagerwey is a Dutch manufacturer of direct drive wind turbines. We are building on 37 years of experience in the development of innovative wind turbines. More than 1,200 Lagerwey turbines have been installed world-wide and various technological spin-offs can be found in other products on the market. Our objective is to continuously reduce the cost price per kWh of wind energy.

Tower/crane - combination

The L136-4.5MW can be built at great height (166+m) by using our smart modular tower, the Modular Steel Tower (MST). This system consisting of steel plates that are assembled on site, makes it possible to create ever higher towers against low additional costs. The modular tower is also installed with a unique crane. This Lagerwey crane will simplify the wind turbine's installation and reduce the cost price per kilowatt hour even more.

Generator – high torque, little noise

Thanks to smart design, our Direct Drive Permanent Magnet (DDPM) generator does not require a cooling system or gear box. The efficiency of the generator is very high, approximately 97% at both full and partial load. As our DDPM generator contains few moving parts, significantly less wear takes place in comparison to other wind turbines. This will make the generator very robust and highly suitable for demanding circumstances in both warm and cold climates.

We unburden our customers

Our wind turbines are delivered turn-key and are manufactured at our own factory in the Netherlands. Our engineering, production and service departments ensure high quality in design and production, great reliability and optimum performance. We unburden our customers and will offer you a unique approach in which we will work together at a successful wind energy project.

ADVANTAGE THROUGH SIMPLICITY



L136 4.0-4.5MW

Technical data



GENERAL

| | |
|-----------------|--|
| Nominal power | 4.0-4.5 MW |
| Rotor diameter | 136 m |
| IEC class | IIA |
| Turbine concept | Direct drive, variable speed, variable pitch, full power converter |

ROTOR

| | |
|----------------------|--|
| Type | 3 blades, upwind rotor |
| Rotor surface | 14.655 m ² |
| Power control | Electric pitch control |
| Blade material | Glass fibre/Epoxy |
| Lightning protection | Integrated in the blade, in direct contact with construction |

GENERATOR

| | |
|------------------|--|
| Type | Lagerwey multi-pole synchronous |
| Field generation | Permanent magnet |
| Main bearing | Double row of conical bearings |
| Cooling | Based on air flow around the outside of generator (cooling fins) |

SAFETY SYSTEM

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|------|--|
| Type | 3 independent systems with emergency power provision |
|------|--|

CONVERTER

| | |
|----------------|---------------------|
| Type | Full power AC-DC-AC |
| Control system | IGBT-Control |
| Cooling | Water-cooled |

OPERATIONAL DATA

| | |
|--------------------|-----------|
| Cut in wind speed | 2.0 m/s |
| Cut out wind speed | 25 m/s |
| Power factor | Regulated |

OTHER

| | |
|----------------------|---|
| Service brake system | Standard |
| Safeguard | Rotor blade, yaw motor and drive |
| Lubrication system | Automatically controlled bearing and gear lubrication |

TOWER

| | |
|--------------|---|
| Type | MST - Modular Steel Tower |
| Shaft height | 120 / 132 / 144 / 166 m (alternative hub height on request) |

OPTIONS

| | |
|-------------------------|----------|
| Service lift | Standard |
| Rescue module gondola | Standard |
| Noise reduction | Standard |
| Obstacle light/markings | Optional |
| Ice management system | Optional |
| Cast shade regulation | Optional |