

**LTW90** 1.000 kW / 1.500 kW





## LTW90 1.000 / 1.500 kW

### DESIGN DATA

|                    |                    |
|--------------------|--------------------|
| Hub height         | 80 m               |
| Rated power        | 1.000 / 1.500 kW   |
| Tower              | Steel              |
| Cut-in wind speed  | 3 m/s              |
| Cut-out wind speed | 25 m/s             |
| Yaw control system | Active, electrical |
| Wind class         | IIIA               |

### ROTOR

|                               |                      |
|-------------------------------|----------------------|
| Number of blades              | 3                    |
| Rotor diameter                | 90,3 m               |
| Swept area                    | 6.404 m <sup>2</sup> |
| Rotational speed              | 15 rpm               |
| Tip speed                     | 71 m/s               |
| Blade material                | GFRP-UP              |
| Power and rotor speed control | Active pitch control |

### GENERATOR

|                  |   |
|------------------|---|
| Type             | Permanent Magnet Direct Drive Synchronous Machine               |
| Stator Winding   | Modular coils with tooth concentrated winding, exchangeable     |
| Rotor Topology   | Modular Permanent Magnets with flux concentration, exchangeable |
| Speed Range      | Variable Low Speed Machine                                      |
| Protection class | IP55  |

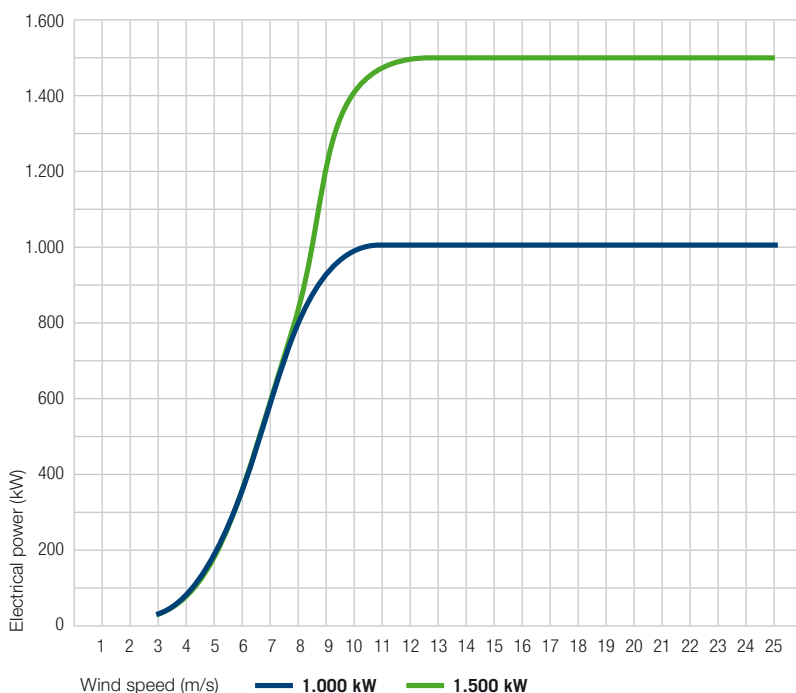
### CONTROL & SAFETY SYSTEM

|                |  |
|----------------|--|
| Main brake     | Aerodynamic, independent pitch control |
| Service brake  | Hydraulic                              |
| Rotor lock     | Hydraulic                              |
| Remote control | Leitwind - SCADA                       |

### POWER ELECTRONIC

|   |   |
|---|---|
| Converter type                                    | 4Q full power - 3 phase IGBT  |
| Converter rated voltage and frequency (grid-side) | 690 V $\pm$ 10%, 50-60 Hz $\pm$ 5%  |
| Converter power factor (grid-side)                | 0,95 ind - 1 - 0,95 cap for reactive power compensation control, grid voltage control capability  |
| Cooling   | Air cooled rotor and water cooled stator  |
| Power quality and Grid codes                      | High quality output power in accordance with major grid code requirements. Integration into various grid systems worldwide. In compliance with:<br>- Grid codes CEI 0-16, TERNA, e-on (incl. LVRT)<br>- Power quality measurements according to IEC 61400-21<br>- Emission limits IEC 61800-3 |
| Arrangement                                       | Single or multiple converter  |

## Power curve



| Wind speed (m/s) | Electrical power (kW) |       |
|------------------|-----------------------|-------|
| 3,0              | 39                    | 39    |
| 4,0              | 107                   | 107   |
| 5,0              | 216                   | 216   |
| 6,0              | 379                   | 379   |
| 7,0              | 602                   | 602   |
| 8,0              | 869                   | 888   |
| 9,0              | 994                   | 1.221 |
| 10,0             | 1.000                 | 1.431 |
| 11,0             | 1.000                 | 1.499 |
| 12,0             | 1.000                 | 1.500 |
| 13,0             | 1.000                 | 1.500 |
| 14,0             | 1.000                 | 1.500 |
| 15,0             | 1.000                 | 1.500 |
| 16,0             | 1.000                 | 1.500 |
| 17,0             | 1.000                 | 1.500 |
| 18,0 - 25,0      | 1.000                 | 1.500 |

Information, specifications and/or pictures subject to change without notice.

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