

MODEL

LTW42

250 | 500 kW



LTW42

250 - 500 kW

The smallest wind turbine in the LEITWIND portfolio, it was developed specifically to safeguard the environment, aiming for decentralised production of low-cost renewable energy and its direct consumption right where it is produced. Its compact size and low visual impact are just some of the many features that make this turbine model a real success.

CHARACTERISTICS

- Ideal for low-wind areas
- Streamlined authorisation procedure
- Short installation times
- Low visual impact
- Suitable for self-consumption
- Up to 97% average technical availability



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DESIGN DATA

Rated power	250 500 kW
Hub height	28 / 39 m
Tip height max (upper end)	49 / 60 m
Wind class	S
Cut-in wind speed	2.5 m/s
Cut-out wind speed	20 m/s
Concept	Direct Drive 3-bladed upwind turbine with horizontal axis, variable speed and automatic pitch and yaw regulation

TOWER

	Segmented tubular steel tower
	Transformer and converter station in tower bottom

ROTOR

Rotor diameter	42 m
Swept area	1,416 m ²
Rotational speed	29.7 rpm
Tip speed	66 m/s
Blade material	GFRP-EP
Power and rotor speed control	Active pitch control

GENERATOR Direct Drive

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
Cooling	Air cooled rotor, air cooled stator
Speed Range	Variable Low Speed Machine

CONTROL & SAFETY SYSTEM

Pitch and yaw control	Active electrical LeitPitch system and active electrical yaw system
Remote control	Leitwind integrated SCADA
Safety system	Hardwired safety loop
Main brake	Aerodynamic, independent pitch control
Service brake	Hydraulic
Rotor lock	Hydraulic

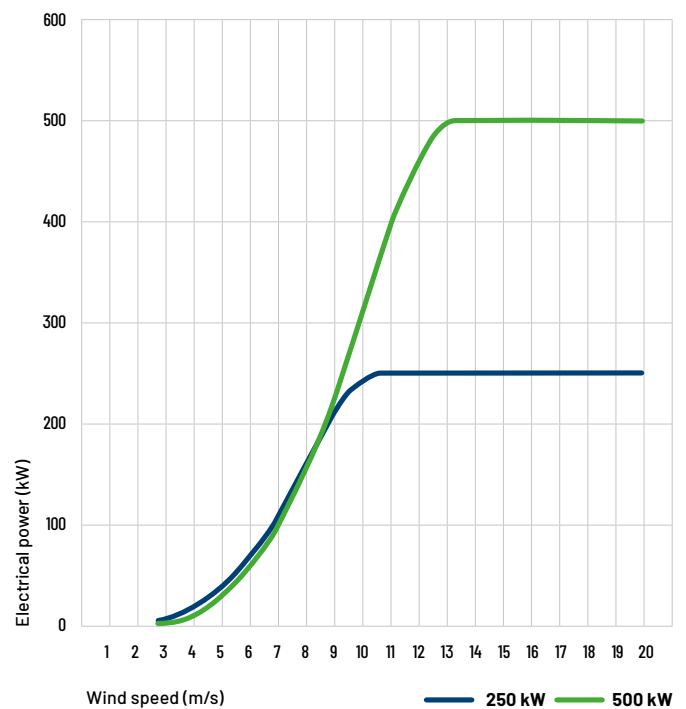
POWER ELECTRONIC LeitDrive

Converter type	4Q full power - 3 phase IGBT
Arrangement	Single LeitDrive converter
Converter rated voltage and frequency (grid-side)	690 V ±10% (MV grid connection on demand), 50-60 Hz ±5%
Converter power factor (grid-side)	0.95 ind - 1 - 0.95 cap for reactive power compensation control, grid voltage control capability
Power quality and Grid codes	<p>High quality output power in accordance with major grid code requirements. Integration into various grid systems worldwide.</p> <ul style="list-style-type: none"> - Grid code compliance e.g. CEI 0-16, TERNA (incl. LVRT) and many other countries - Power quality according to IEC 61400-21 - Emission limits according to IEC 61800-3

AEP - ESTIMATED ANNUAL ELECTRICAL PRODUCTION

	LTW42 250 kW	LTW42 500 kW
m/s	MWh/y	MWh/y
4.5	492	495
5.0	622	676
5.5	750	872
6.0	872	1,075
6.5	985	1,278
7.0	1,088	1,472
7.5	1,181	1,653

POWER CURVE



Wind speed (m/s)	LTW42 250 kW Electrical power (kW)	LTW42 500 kW Electrical power (kW)
2.5	3	0
3.0	7	0
4.0	22	14
5.0	47	40
6.0	81	74
7.0	128	124
8.0	190	188
9.0	234	270
10.0	249	360
11.0	250	439
12.0	250	483
13.0	250	496
14.0	250	500
15.0 - 20.0	250	500