ADES PENDULAR WIND TURBINE 100 kW

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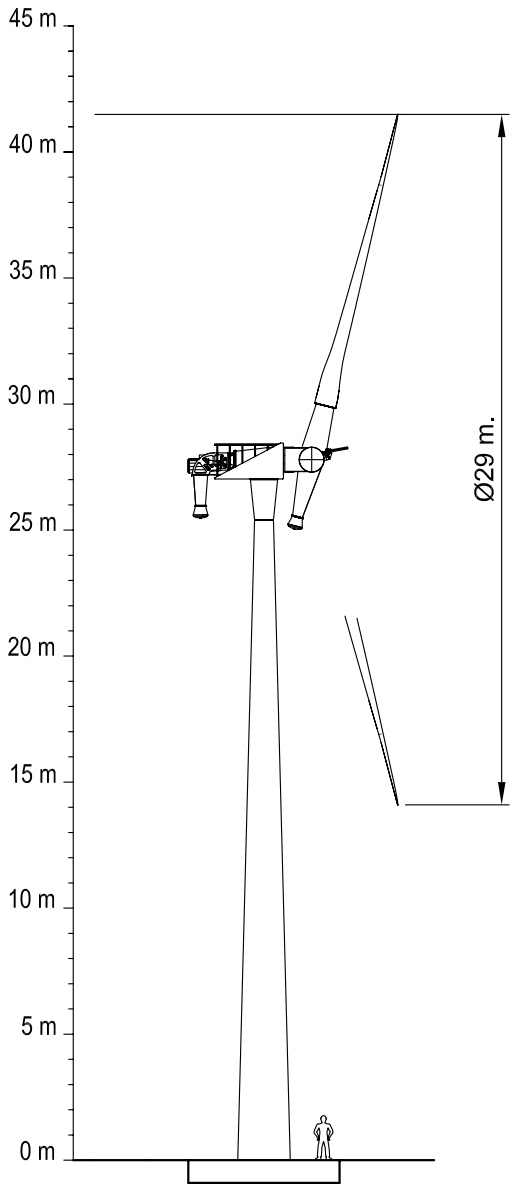
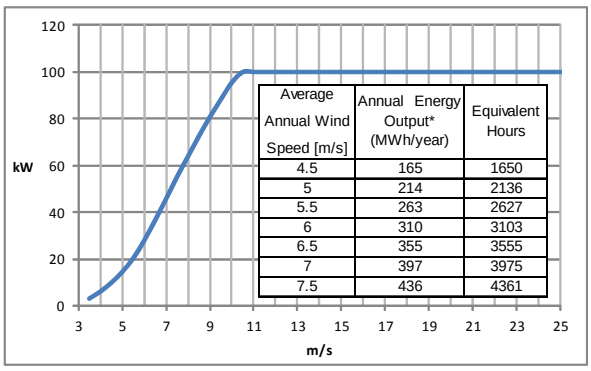


1	Rated power (kW)	100
	Rated wind speed (m/s)	9
	Cut in / out Speed (m/s)	3.5 / 20
	Wind direction	Downwind
	Wind class	IEC III
	Operating temperature range	-20 º C to 45 º C
2	ROTOR	Swivelling Single blade
	Material	Fibreglass / epoxy resin
	Turbined area (m^2) / Ratio m^2/kW	600 / 6
	Pitch	Variable
	Rotor Speed (rpm)	up to 55 rpm
	Max torque (kNm) / Thrust (kN)	21 / 24.3
	Turn direction	Clockwise (looking to downwind)
	Rotor height (m)	28
	Weight (kg)	3200
3	PENDULUM	
	Multiplication ratio	15.5
	Efficiency %	96
	Lubrication	Oil bath
	Generator	Squirrel-cage rotor
	Number of poles	8
	Voltage (V)	up to 500
	Frequence (Hz)	50/60 Hz
	Proteccion class	IP 54
	Thermal class	F
	Weight (kg)	2000
4	Nacelle Weight (kg)	1800
5	Weight over tower (kg)	7000
6	Tower weight (kg)	9900
7	Total structure weight (kg)	16900
8	Electrical cabinet (kg)	900
9	Sound power level dB (A)	72

ELECTRIC POWER STD CONDITIONS

Clean Blade - ρ= 1,225 kg/m3

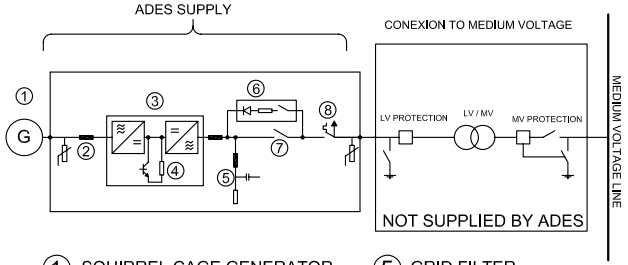


Average Annual Wind Speed [m/s]	Annual Energy Output* (MWh/year)	Equivalent Hours
4.5	165	1650
5	214	2136
5.5	263	2627
6	310	3103
6.5	355	3555
7	397	3975
7.5	436	4361

Tolerance ± 3%

*Annual energy production estimates assumes a Rayleight wind distribution, standard conditions, no transmission losses and 100% availability.

UNIFILAR SCHEME



1. SQUIRREL CAGE GENERATOR
2. dV/dt FILTER
3. POWER CONVERTER
4. CHOPPER BREAKER
5. GRID FILTER
6. PRE-CHARGING UNIT
7. MAINS CONTACTOR
8. MAINS CIRCUIT BREAKER

In comply with Operating Procedure for Voltage Dips and EMC