

GENERAL INFORMATION	
Type	Horizontal Axis Wind Turbine
Rated Power at Grid	kW 60
Model	SG 60.28_C36
Design Standards	EN IEC 61400 / CEI 021
Wind Class	III A
Cut-in Speed	m/s 3,0
Rated Wind Speed	m/s 7,5
Cut-out Wind Speed	m/s 25,0
Orientation	Upwind
Air Density	kg/m ³ 1,225
Operation Temperature	from -10° to + 45°
Survival Temperature	from -20° to + 50°
Solar radiation intensity	W/m ² 1.500
Wind share exponent	0,2
Weibull distribution	k 2

ROTOR & BLADES	
Nr of blades	n° 2
Rotor diameter	m 28
Swept area	m ² 598
Power per area	W/m ² 100,0
Blades material	Glass-Fibre reinforced Epoxy
Overall length	m 13,4
Rotor speed range	rpm from 18 to 48
Rated rotor speed	rpm 46,0
Tip speed	m/s 66,0
Rotation direction	clockwise
Hub material	steel
Lightning protection	Aluminium Receptor system
Aerodynamic Profile	Windblade
Maximum Chord length	m 1,29
Production method	VI or HL
Pitch Sensors	2x digital incl. limit switches

NACELLE	
main frame material	steel
No of drives	n° 1
Yaw area	deg -720 to +720
Yaw speed	deg/s 1
normal pitch speed	deg/s 5
Max pitch speed	deg/s 8
Yaw Sensor	1 x digital incl. limit switches

GENERATOR	
Type	Permanent Magnet Generator
Nominal voltage	Vac 400 3ph
Transmission	direct drive
Cooling	passive air cooling
Protection class	IP56

FULL POWER CONVERTER	
Type	IGBT Based Modular Designed Full Power Converter with LC Filter
Nominal voltage	Vac 400 3ph
Frequency (line side)	Hz 50 / 60
Power Factor	0.9 cap. to 0.9 ind.
Grid code	EON grid code 2008

CONTROL	
Control System	PLC Controller
Control Concept	Variable speed
Supervisory System	Scada
Connection	Modem GPRS/UMTS/ADSL /Wifi
Rotor speed	digital
wind speed / direction	ultrasonic

SAFETY SYSTEM	
Over Speed	safety relay
Vibrations	safety relay

BRAKE SYSTEM	
Aerodynamic brake	accumulated single pitch control
Hydraulic brake	fail safe rotor brake system

TOWER	
Tower type	concrete
Rotor Hub Height	m 36
Number of tower sections	n° 1 optional 2
Weigth without fixtures	t 25

LUBRICATION SYSTEMS	
Lubrication central systems	Automatic lubrication for all bearings

LIGHTING PROTECTION	
According to	IEC 61400-24 IEC 61024 & IEC 62305

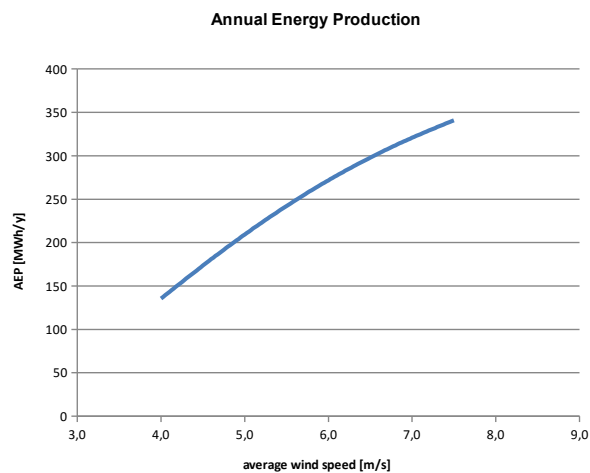
WIND SPEED [m/s]	POWER [kW]	AVERAGE WIND SPEED [m/s]	AEP [MWh/y]
3	4,0		
4	9,4	4,0	135,6
5	18,8	4,5	173,5
6	33,2	5,0	209,4
7	53,1	5,5	242,3
8	60,0	6,0	271,8
9	60,0	6,5	297,9
10	60,0	7,0	320,8
11	60,0	7,5	340,9
12	60,0		
13	60,0		
14	60,0		
15	60,0		
16	60,0		
17	60,0		
18	60,0		

(*) Active power is given at the turbine main switch and does not consider high voltage transformer losses nor other subsequent site specific grid connection losses.

Availability 100%

Wind share exponent

0,2



All data can be changed without any notice.
This schedule can be modified at any time

