



WES80

'Bringing renewable energy everywhere'

The WES80 is a two bladed, high performance, reliable 80 kW midsize wind turbine with a rotor diameter of 18 meters. The mechanical part of the WES80 is based on the original proven design from 1983. For the electrical part, power conversion and control, the latest technology is used. The WES80 is also available as Hybrid Wind/diesel system.



Wind Energy Solutions BV

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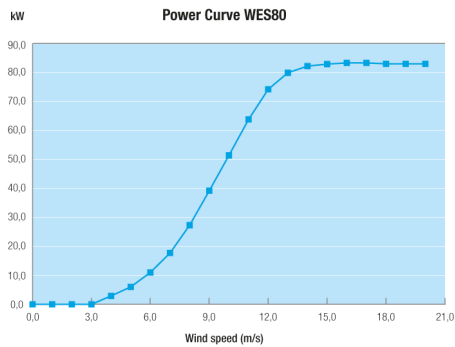
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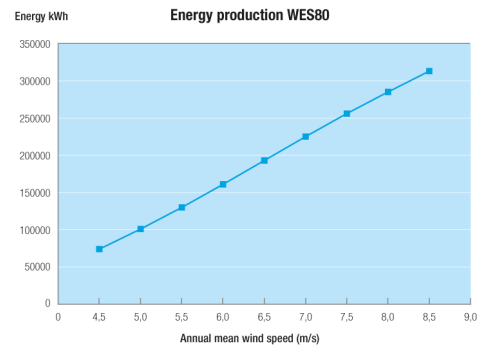
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TECHNICAL SPECIFICATIONS

Wind speed (m/s)	Power kW
0,0	0,0
1,0	0,0
2,0	0,0
3,0	0,0
4,0	2,9
5,0	6,0
6,0	11,0
7,0	17,7
8,0	27,3
9,0	39,2
10,0	51,4
11,0	63,8
12,0	74,2
13,0	79,9
14,0	82,2
15,0	82,9
16,0	83,3
17,0	83,3
18,0	83,0
19,0	83,0
20,0	83,0



Wind speed (m/s)	Energy kWh
4,5	74000
5,0	101000
5,5	130000
6,0	161000
6,5	193000
7,0	225000
7,5	256000
8,0	285000
8,5	313000



GENERAL

Life expectancy:	Minimum 20 years
Rated power:	80 kW
Cut in Wind speed:	< 3 m/s (6.7mph)
Cut out Wind speed:	25 m/s (56mph)
Rated wind speed:	13 m/s (28mph)
Survival wind speed:	60 m/s (134mph)
Wind class:	II
Yawing:	Active
Passive power regulation:	Blade-angle adjustment
Active power regulation:	Fully variable back-to-back IGBT system
Towers heights :	18 m, 24 m, 30 m, 39 m (31 m lattice)
Number of blades:	2
Rotor diameter:	18 m
Noise emission at 8 m/s :	45 dB(a) at 100 m
Operating temperatures:	from -20°C up to + 40°C

ELECTRICAL

Power:	83 kW
Voltage:	400V/50Hz 3 phase + neutral or 400V/60Hz 3 phase + neutral
Connection:	grid connected / Hybrid
Converter:	back-to-back inverter (IGBT)

MATERIAL SPECIFICATIONS

Blades:	carbon and glass fibre reinforced epoxy
Nacelle:	steel
Cover:	polyester
Tower:	steel (hot dip galvanized)
Foundation:	concrete block with anchor

WEIGHTS

Blade assembly:	110 kg per blade
Rotor:	900 kg
Nacelle incl. Rotor and blades:	3.300 kg

KEY COMPONENTS

Generator:	ABB
Gearbox:	Siemens
Converter:	Control Techniques (Emerson)

APPLIED STANDARDS

Degree of protection:	IP55
Complies with standards:	NEN1010 (electrical), EN50308 (safety), EN6096 (wind turbines) UI1741, G59/2 (anti Islanding), IEC61346-2000 (Cabinet)
CE-mark:	yes

