

FX EVO 30B-50



HWTG

Wind Turbine Generator
Rev: 2019-november

Model: FX EVO 30B-50

Datasheet

GENERAL INFORMATION	
Type	Horizontal Axis Wind Turbine
Nominal Power	kW 49,80
Model	FX EVO 30B-50
Design and built to IEC Standard	CEI EN IEC61400-1
Wind Class	IEC Class S Class 1 for ultimate load cases Class 2 for fatigue load cases
Cut-in Wind Speed	m/s 2,5
Rated Wind Speed	m/s 8,0
Cut-out Wind Speed	m/s 25
Working Temperature	From -10°C to +40°C
Humidity	Up to 95%
Environmental condition	Equivalent to continental non-polluted according to IEC 60721-2-1
Solar irradiation	1000 W/m2
Air density/Turbulence	1.225 kg/m3 at 15°C / 18%
Total weight @ different hub height	
Total weight (@30m)	kg 27.500
Tower weight (@30m)	kg 16.100
Nacelle weight (including rotor)	kg 11.400

ROTOR BLADES	
Nr of blades	nr 2
Rotor diameter	m 30
Swept area	m ² 706,50
Blades material	FRP (Fiberglass Reinforced Polymer)
Rotation speed	rpm 26
Rotation speed range	rpm 7-29
Rotation speed (max)	rpm 30
Rotation direction	Clockwise
Yaw directionality	Active with anti torque cable device
Colour	White RAL9010

STALL CONTROL	
Active Stall Control	Variable speed stall control

GENERATOR	
Type	Direct Drive
Generator type	Synchronous radial flux permanent magnet generator - external use
Nominal power	kW 49,80
Voltage	300-410V AC
Cooling system	Conventional air cooling

INVERTER	
Type	AC/DC/AC dual feed
Input voltage	Max 480V three-phase 100 Hz
Output voltage	400V three-phase / 200V three-phase
Certification	CEI-021

CONTROL AND SUPERVISION	
Control system	Industrial PLC
Supervision system	Remotely controlled SCADA
Connection	Modem/router UMTS/ADSL/3G-4G

TOWER	
Type	Flanged
Hub height	m 30
Colour	Hot dip galvanized / White RAL9010 (Option)
Technical room	Internal

SAFETY	
Active and Negative Braking	Rotation braking with: * elastic energy accumulating brake calipers * hydraulic energy accumulating brake calipers
Manual Safety Rotor Lock	Parking rotor block with mechanical interference pin system
Active Yaw Control	Protecting the WTG in case of sharp atmospheric conditions, setting the safety stop position
Access to the nacelle	Easy access to the nacelle without mobile elevating work platform (MEWP), thanks to certified ladder

NOISE	
Apparent noise level	dB 55

LPS (LIGHTNING PROTECTION SYSTEM)	
Design and built according to IEC 61400-24	External LPS on blades and nacelle, internal LPS with surge suppressors

NACELLE	
Type	Painted steel coupled to the tower, with yaw ring bearing
Covering	Fiberglass, aerodynamic shape
Colour	White RAL9010

* this datasheet is subject to changes at any time.

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Table # 01: Power Curve and CP

WIND SPEED [m/s]	POWER** [m/s]	CP**
0,00	0,00	0,000
0,50	0,00	0,000
1,00	0,00	0,000
1,50	0,00	0,000
2,00	0,93	0,265
2,50	2,31	0,337
3,00	4,35	0,368
3,50	7,21	0,384
4,00	11,00	0,392
4,50	15,88	0,398
5,00	21,96	0,401
5,50	29,40	0,403
6,00	37,49	0,396
6,50	43,57	0,362
7,00	47,03	0,313
7,50	48,54	0,263
8,00	49,43	0,220
8,50	49,80	0,185
9,00	49,80	0,156
9,50	49,80	0,133
10,00	49,80	0,114
10,50	49,80	0,098
11,00	49,80	0,085
11,50	49,80	0,075
12,00	49,80	0,066
12,50	49,80	0,058
13,00	49,80	0,052
13,50	49,80	0,046
14,00	49,80	0,041
14,50	49,80	0,037
15,00	49,80	0,034
15,50	49,80	0,031
16,00	49,80	0,028
16,50	49,80	0,025
17,00	49,80	0,023
17,50	49,80	0,021
18,00	49,80	0,019
18,50	49,80	0,018
19,00	49,80	0,017
19,50	49,80	0,015
20,00	49,80	0,014
20,50	49,80	0,013
21,00	49,80	0,012
21,50	49,80	0,011
22,00	49,80	0,011
22,50	49,80	0,010
23,00	49,80	0,009
23,50	49,80	0,009
24,00	49,80	0,008
24,50	49,80	0,008
25,00	49,80	0,007

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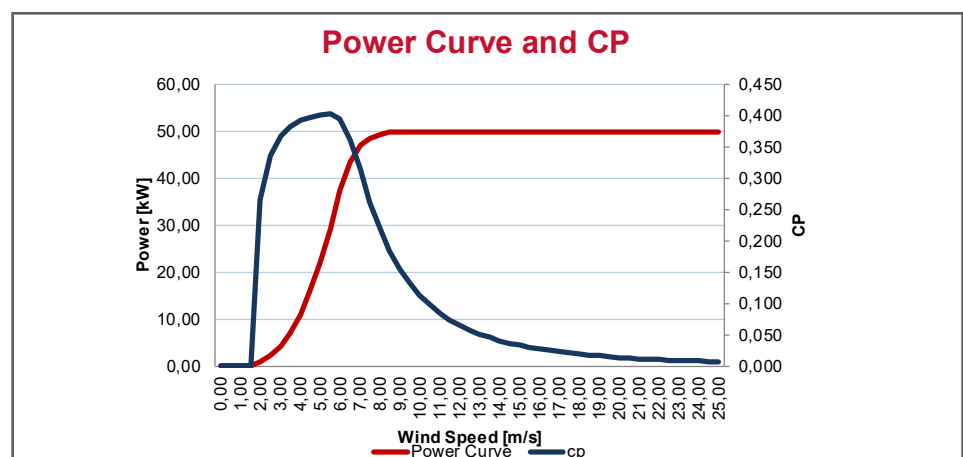
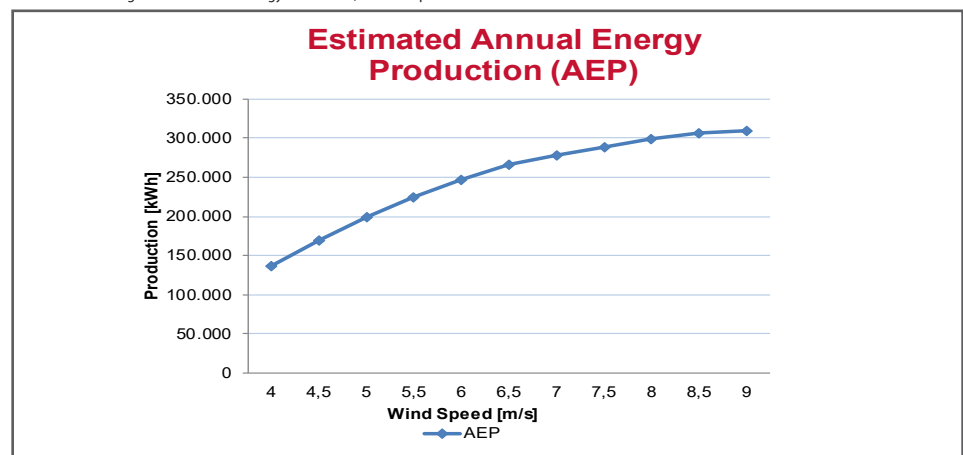
Power curve - AEP

Table # 02: AEP - Annual Energy Production

Average Wind Speed [m/s]	Estimated annual energy production [kWh]*
4	137.442
4,5	169.571
5	198.709
5,5	224.506
6	246.994
6,5	266.363
7	278.246
7,5	289.117
8	298.335
8,5	305.805
9	308.919

* ESTIMATED PRODUCTION WITH AVAILABILITY OF 100%

This table does not guarantee Annual Energy Production, as AEP depend on environmental conditions.



** data relating to the power curve and the CP coefficient are actually taken from the validation being carried out by accredited laboratory ILAC-MRA, according to the IEC61400-12

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