



Wind Turbine FX EVO
Rev: 2021 - January

FX EVO 30B-100



FX EVO 30B-100

Wind Turbine Generator

Rev: 2021 - January



GENERAL INFORMATION

Type	Horizontal Axis Wind Turbine	
Nominal Power	kW	99,80
Model	FX EVO 30B-100	
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	10
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/m ²	
Air density/Turbulence	1,225 kg/m ³ 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	33
Rotation speed range	rpm	11-38
Rotation speed (max)	rpm	40
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 99,80
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	29,75
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.

Power Curve and CP

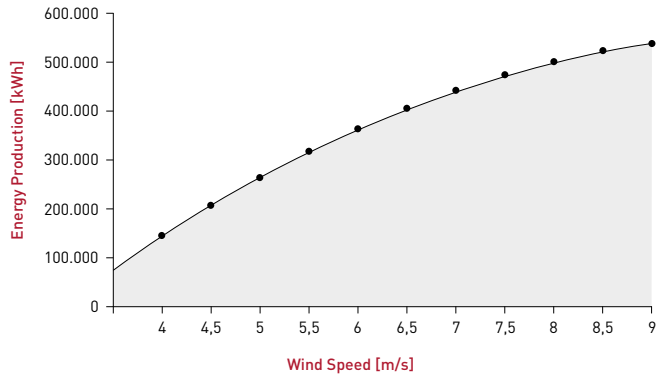
WIND SPEED [m/s]	POWER** [m/s]	CP**
0,00	0,00	0,000
0,50	0,00	0,000
1,00	0,00	0,000
1,50	0,00	0,000
2,00	0,00	0,000
2,50	2,21	0,323
3,00	4,25	0,359
3,50	7,01	0,373
4,00	10,88	0,388
4,50	15,70	0,393
5,00	21,66	0,395
5,50	28,80	0,395
6,00	37,46	0,396
6,50	47,72	0,397
7,00	59,27	0,394
7,50	70,01	0,379
8,00	78,56	0,350
8,50	85,28	0,317
9,00	91,32	0,286
9,50	95,39	0,254
10,00	97,16	0,222
10,50	98,22	0,194
11,00	99,68	0,171
11,50	99,80	0,150
12,00	99,80	0,132
12,50	99,80	0,117
13,00	99,80	0,104
13,50	99,80	0,093
14,00	99,80	0,083
14,50	99,80	0,075
15,00	99,80	0,067
15,50	99,80	0,061
16,00	99,80	0,056
16,50	99,80	0,051
17,00	99,80	0,046
17,50	99,80	0,042
18,00	99,80	0,039
18,50	99,80	0,036
19,00	99,80	0,033
19,50	99,80	0,031
20,00	99,80	0,028
20,50	99,80	0,026
21,00	99,80	0,025
21,50	99,80	0,023
22,00	99,80	0,021
22,50	99,80	0,020
23,00	99,80	0,019
23,50	99,80	0,018
24,00	99,80	0,016
24,50	99,80	0,015
25,00	99,80	0,015

AEP - Annual Energy Production

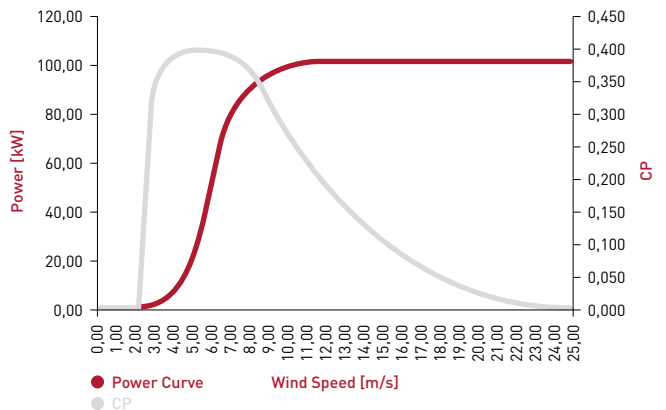
Average Wind Speed [m/s]	Estimated annual energy production [kWh]*
4	158.992
4,5	209.305
5	260.143
5,5	309.520
6	355.959
6,5	398.970
7	432.744
7,5	466.707
8	488.174
8,5	513.689
9	529.458

* ESTIMATED PRODUCTION WITH AVAILABILITY OF 100%
 This table does not guarantee Annual Energy Production, as AEP depend on environmental conditions.

Estimated Annual Energy (AEP)



Power Curve and CP



** 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

ESPE S.p.A

Via dell'Artigianato, 6
35010 Grantorto (PD) Italy
Tel. +39 049 945 50 33