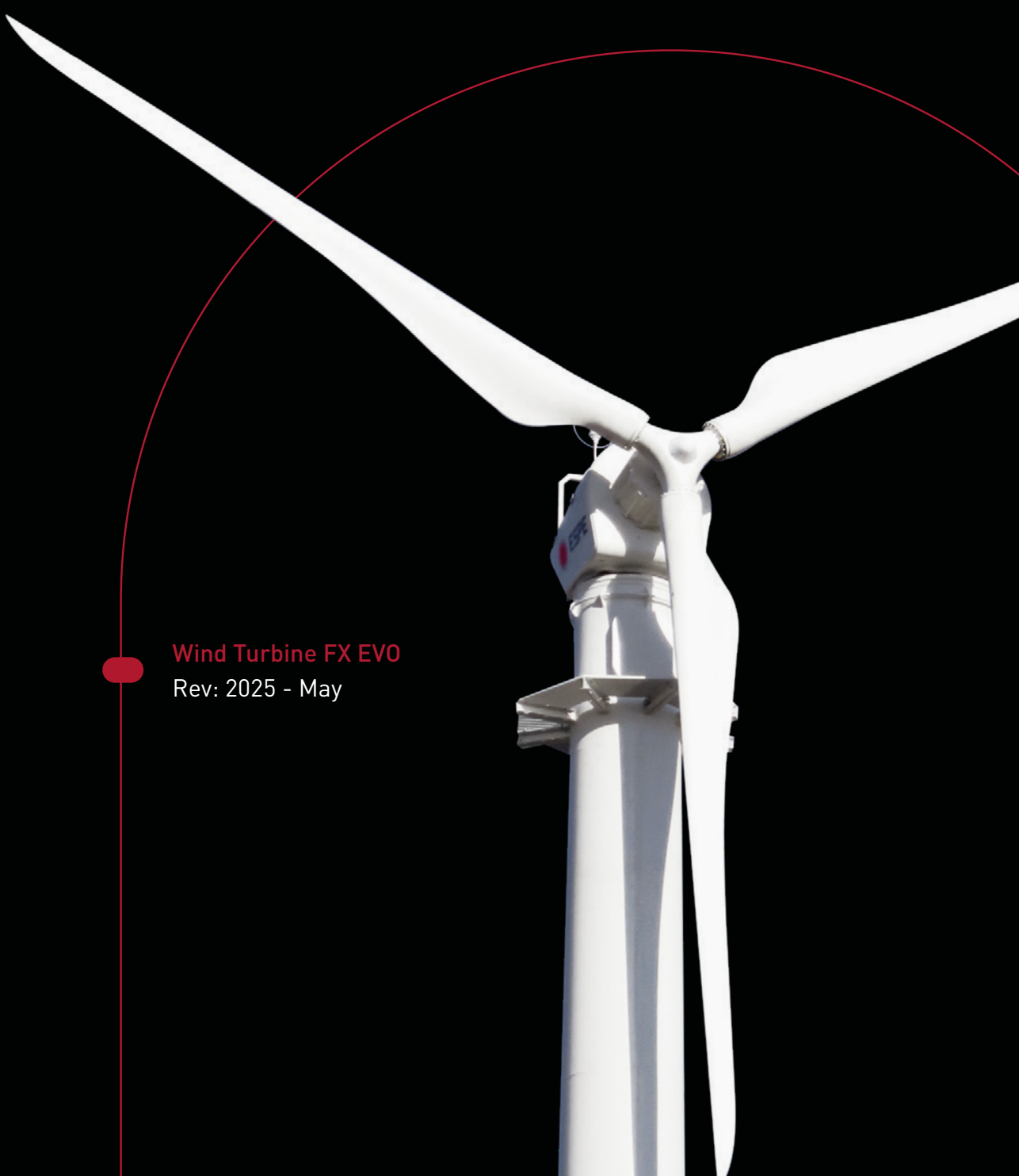




Wind Turbine FX EVO

Rev: 2025 - May

ADVANTAGES OF FX SERIES



Dedicated after-sales service team providing continuous support and maintenance



Long-life components and reinforced structures for optimum safety



Easy maintenance assured by ergonomic and accessible design



Superior performance delivered even in light winds



Constant energy production, with no breaks due to changing weather conditions

FX EVO 16-20



WIND TURBINE

GENERAL INFORMATION

Type	Horizontal Axis Wind Turbine	
Nominal Power	kW	19,80
Model	FX EVO 16-20	
Design and built to IEC Standard	CEI EN IEC61400-2	
Wind Class	IEC Class 1	
Cut-in Wind Speed	m/s	3,0
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 a 95%	
Enviromental condition	Equivalent to continental non-polluted according to IEC 60721-2-1	
Solar radiation intensity	1000 W/m2	
Air density / Turbulence intensity	1,225 kg/m3 a 15°C / 18%	
Total weight of WTG for 18 / 25,7 m tower height	kg	9.200 / 12.000
Tower weight for 18 / 25,7 m tower height	kg	4.800 / 7.600
Necelle weight (including rotor)	kg	4.400

ROTOR BLADES

N° of Blades	nr	3
Rotor diameter	m	15,94
Swept area	m2	199,50
Blade material	FRP (Fiberglass Reinforced Polymer)	
Rotational speed	rpm	50
Rotational speed range	rpm	26,5-50
Max rotational speed	rpm	70
Rotation direction	Clockwise	
Yaw directionality	Active with anti twist cable device	
Colour	White RAL9010	

AERODYNAMIC CONTROL

Passive Stall	
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GENERATOR

Type	Direct Drive	
Generator type	Synchronous radial flux Permanent Magnet Generator - external use	
Nominal [Peak*] Power	kW	19,80
Voltage	300-410V AC	
Cooling system	Natural air convection	

INVERTER

Type	AC/DC/AC dual feed	
Input voltage	max 480V Three-phase 100 Hz	
Output voltage	400V Three-Phase	
Certification	CEI-021	

CONTROL AND SUPERVISION

Controll system equipment	Industrial PLC	
Supervision system	Remote controlled SCADA	
Connection	Modem UMTS/ADSL/3G-4G	

TOWER

Type	Flanged	
Height	m	17,9 / 25,7
Colour	Hot dip galvanized / White RAL9010 [optional]	
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 harsh 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
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LPS (Lighting Protection System)

Designed and built according to IEC 61400-24	External LPS on blades and nacelle Internal LPS with surge suppressors	
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NACELLE

Type	Painted steel coupled to the tower, with yaw ring bearing	
Enclosure	Fiberglass, Aerodynamic shape	
Hub colour	White - RAL9010	

* This datasheet is subject to changes at any time

Power Curve and CP

Wind Speed [m/s]	Power [kW]**	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	0,00	0,000
3,00	0,69	0,207
3,50	1,39	0,262
4,00	2,33	0,294
4,50	3,53	0,313
5,00	5,02	0,325
5,50	6,85	0,333
6,00	9,05	0,339
6,50	11,64	0,343
7,00	14,66	0,345
7,50	18,14	0,348
8,00	19,80	0,314
8,50	19,80	0,262
9,00	19,80	0,221
9,50	19,80	0,188
10,00	19,80	0,161
10,50	19,80	0,139
11,00	19,80	0,121
11,50	19,80	0,106
12,00	19,80	0,093
12,50	19,80	0,082
13,00	19,80	0,073
13,50	19,80	0,065
14,00	19,80	0,059
14,50	19,80	0,053
15,00	19,80	0,048
15,50	19,80	0,043
16,00	19,80	0,039
16,50	19,80	0,036
17,00	19,80	0,033
17,50	19,80	0,030
18,00	19,80	0,028
18,50	19,80	0,025
19,00	19,80	0,023
19,50	19,80	0,022
20,00	19,80	0,020
20,50	19,80	0,019
21,00	19,80	0,017
21,50	19,80	0,016
22,00	19,80	0,015
22,50	19,80	0,014
23,00	19,80	0,013
23,50	19,80	0,012
24,00	19,80	0,012
24,50	19,80	0,011
25,00	19,80	0,010

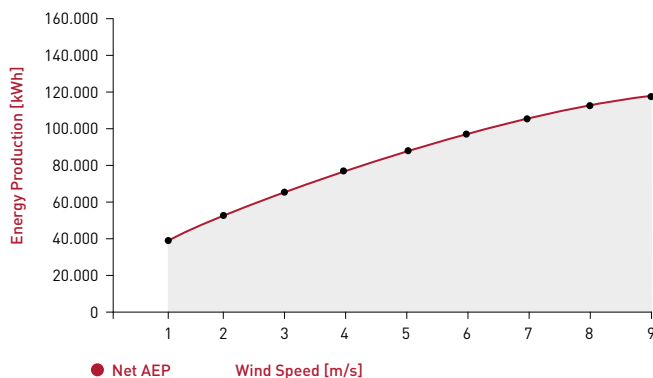
Annual Energy Production

Average Wind Speed [m/s]	Estimated annual energy production [kWh]*
4	37.850
4,5	49.863
5	61.588
5,5	72.590
6	82.614
6,5	91.614
7	99.631
7,5	106.700
8	112.911

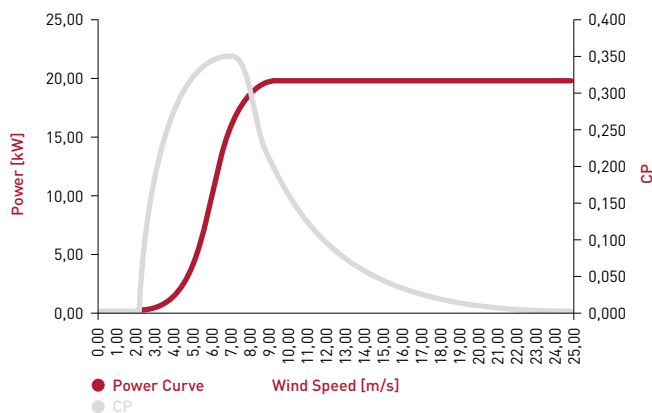
* ESTIMATED PRODUCTION WITH AVAILABILITY OF 100%

This table does not guarantee Annual Energy Production, as AEP depends on environmental factors and the specific characteristics of the wind in the actual installation site.

Estimated annual energy production (AEP) FX 16-20



Power curve and CP FX EVO 16-20



** 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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