

# TECHNICAL DATA

Turbine and generator manufacturer	ROPATEC														
Turbine model	T20pro														
Nominal power	20 kW														
Wind speed	<table border="1"> <tr> <td>Start-up</td> <td>CUSTOMIZED</td> <td>Cut-In</td> <td>ca. 4 m/s**</td> </tr> <tr> <td></td> <td></td> <td>CUT-OUT</td> <td>22 m/s</td> </tr> <tr> <td></td> <td>STANDARD</td> <td>CUT-OUT</td> <td>17 m/s</td> </tr> </table>	Start-up	CUSTOMIZED	Cut-In	ca. 4 m/s**			CUT-OUT	22 m/s		STANDARD	CUT-OUT	17 m/s	Wind class according to IEC 61400-2	class III
Start-up	CUSTOMIZED	Cut-In	ca. 4 m/s**												
		CUT-OUT	22 m/s												
	STANDARD	CUT-OUT	17 m/s												
Generator	Direct driven permanent magnets														
Turbine wings material	Carbon and glass fiber														
Turbine diameter	10 m														
Wing length	10 m														
Overspeed control	Safety PLC controller SIL-3 (electrical and hydraulic brake)														
Noise	<table border="1"> <tr> <td>Value</td> <td>ca. 40 dB</td> </tr> <tr> <td>Wind speed</td> <td>8 m/s</td> </tr> <tr> <td>Distance from pole</td> <td>30 m</td> </tr> </table>	Value	ca. 40 dB	Wind speed	8 m/s	Distance from pole	30 m								
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Wind speed	8 m/s														
Distance from pole	30 m														
Support	Pole height	Standard	24 m class III												
Weight	Turbine (without pole)	ca. 3500 kg													
Monitoring system	SDMR / SCADA (optional)														
Operating temperature	-20°C/+55°C														
Operating altitude	≤ 2000 m AMSL														

## Power curve\*\*\*

Wind Speed (m/s)	STANDARD	CUSTOMIZED
	Power (W)	Power (W)
3	59	59
4	620	620
5	2100	2100
6	4000	4000
7	6800	6800
8	9500	9500
9	13400	12500
10	18300	15000
11	20000	16500
11,5	20000	18000
12	20000	19000
13	20000	20000
14	20000	20000
15	20000	20000
16	20000	20000
17	-	20000
18	-	20000
19	-	20000
20	-	20000
21	-	20000
22	-	-

The turbine can be additionally calibrated according to the site.

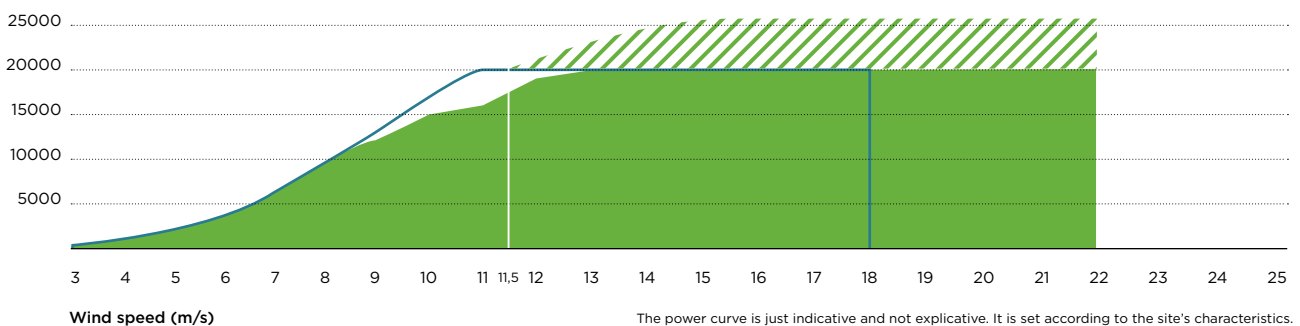
## AEP \*

Distribution K = 2  
IEC 61400-12-1

Annual average wind	STANDARD	CUSTOMIZED
	kWh/year	kWh/year
5,5 m/s	52000	54000
6,0 m/s	61000	64400
6,5 m/s	69000	74000
7,0 m/s	76000	82000

## Power curve

Power (W)



The data reported reflect ideal work conditions; they are subject to change in relations to external factors such as temperature, altitude, atmospheric pressure, turbulence level, humidity and presence of obstructions.

\* Annual Energy Production  
Strongly depending on the wind shear and distribution factor.

\*\* This value is an average of 10 minutes.

\*\*\* The data correspond to a laminar wind.