VESTAS V25 200-30 25.0 !O!

File C:\Users\NEWM\Documents\WindPRO Data\WTG Data\VESTAS V25 200-30 25.0 !O!.wtg

Company	VESTAS
Type/Version	V25
Rated power	200,0 kW
Secondary generator	30,0 kW
Rotor diameter	25,0 m
Tower	Tubular
Grid connection	50 Hz
Origin country	DK
Blade type	VESTAS 11,5
Generator type	Two generator
Rpm, rated power	42,9 rpm
Rpm, initial	0,0 rpm
Hub height(s)	29,0; 0,0 m
Maximum blade width	0,00 m
Blade width for 90% radius	0,00 m
Valid	No
Creator	EMD
Created	29.10.1996 00:00
Edited	29.10.1996 00:00

Power curve: Fab p# basis af m#l. 1.230 25.00 -1.50

Source Fab p# basis af m#l.

Source date	Creator	Created	Edited	Default	Stop windSpeed [m/s]	Air density [kg/m3]	Tip angle [°]	Power control	CT curve type
30.12.1899 00:00	EMD	12.09.1991 00:00	15.11.2000 14:20	No	25,0	1,230	-1,5	Pitch	Standard pitch

Ref: NR. 57EK0019

Power curve

Wind speed	[m/s]	3,00	4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00	13,00	14,00	14,00
Power	[kW]	0,00	3,60	12,30	24,40	39,90	63,40	90,20	118,90	145,70	171,20	195,10	200,10	200,00
Ce		0,000	0,186	0,326	0,374	0,385	0,410	0,410	0,394	0,363	0,328	0,294	0,242	0,241

Ct curve

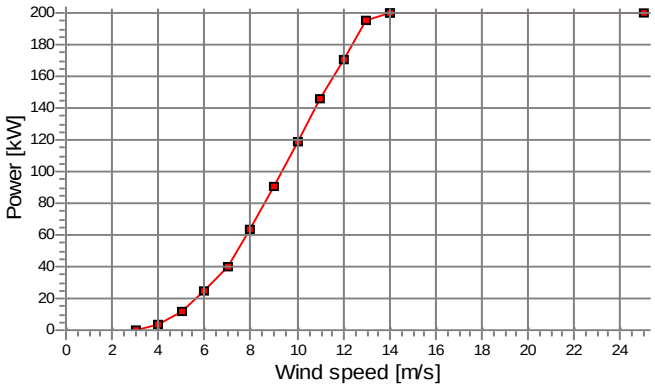
Wind speed	[m/s]	1,00	2,00	3,00	4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00	13,00	14,00	15,00	16,00	17,00	18,00	19,00	20,00	21,00	22,00	23,00	24,00
Ct		0,10	0,10	0,10	0,80	0,82	0,84	0,79	0,72	0,66	0,59	0,53	0,46	0,40	0,33	0,28	0,23	0,20	0,16	0,13	0,12	0,12	0,11	0,11	0,10

HP curve comparison

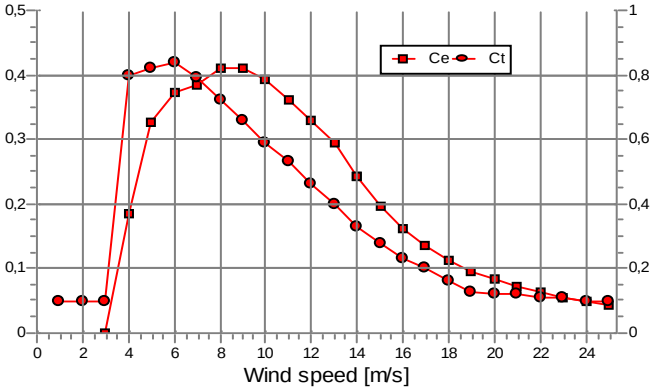
Vmean	[m/s]	5	6	7	8	9	10
HP value	[MWh]	234	387	541	688	818	932
Fab p# basis af m#l. 1.230 25.00 -1.50	[MWh]	224	366	517	663	794	904
Check value	**[%]**	**4**	**6**	**5**	**4**	**3**	**3**

The table shows comparison between annual energy production calculated on basis of simplified "HP-curves" which assume that all WTGs performs quite similar - only specific power loading (kW/m^2) and single/dual speed or stall/pitch decides the calculated values. Productions are without wake losses.
For further details, ask at the Danish Energy Agency for project report J.nr. 51171/00-0016 or see WindPRO manual chapter 3.5.2.
The method is refined in EMD report "20 Detailed Case Studies comparing Project Design Calculations and actual Energy Productions for Wind Energy Projects worldwide", jan 2003.
Use the table to evaluate if the given power curve is reasonable - if the check value are lower than -5%, the power curve probably is too optimistic due to uncertainty in power curve measurement.

Power curve



Ce and Ct curve



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Noise:

Source Skan. Lydteknik A/S

Source date	Creator	Created	Edited	Default
14.07.1988 00:00	User	01.10.1998 00:00	01.10.1998 00:00	No

					Octave data								
Hub height [m]	Wind speed [m/s]	Lwa,ref [dB(A)]	Wind speed dependency [dB(A)/m/s]	Pure tones	63 [dB]	125 [dB]	250 [dB]	500 [dB]	1000 [dB]	2000 [dB]	4000 [dB]	8000 [dB]	A weighted
All	8,0	98,4	0,0	No	97,0	95,0	96,0	93,0	96,0	89,0	84,0	73,0	No
(MEMO)													