DWP 150 22.2 !O!

File C:\Users\NEWM\Documents\WindPRO Data\WTG Data\DWP 150 22.2 !O!.wtg

Company	DWP
Type/Version	
Rated power	150,0 kW
Secondary generator	0,0 kW
Rotor diameter	22,2 m
Tower	Tubular
Grid connection	50 Hz
Origin country	DK
Blade type	LM 11
Generator type	One generator
Rpm, rated power	43,0 rpm
Rpm, initial	0,0 rpm
Hub height(s)	24,0; 30,0 m
Maximum blade width	0,00 m
Blade width for 90% radius	0,00 m
Valid	No
Creator	EMD
Created	15.02.1997 00:00
Edited	15.02.1997 00:00

Power curve: SL 1.230 25.00 0.00

Source SL

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	13.09.1991 00:00	15.11.2000 14:18	No	25,0	1,230	0,0	Stall	Standard stall

Ref: SL 1251.86135 Rapport nr. 1

Power curve

Wind speed [m/s]	2,83	3,77	4,45	5,55	6,43	7,52	8,45	9,46	10,50	11,40	12,30	13,50	14,50	15,30	16,30
Power [kW]	0,00	0,07	1,29	9,79	22,45	41,41	61,36	83,98	106,80	123,40	135,20	146,90	147,50	144,70	142,50
Ce	0,000	0,005	0,061	0,241	0,355	0,409	0,427	0,417	0,388	0,350	0,305	0,251	0,203	0,170	0,138

Wind speed	[m/s]	17,50
Power	[kW]	134,40
Ce		0,105

Ct curve

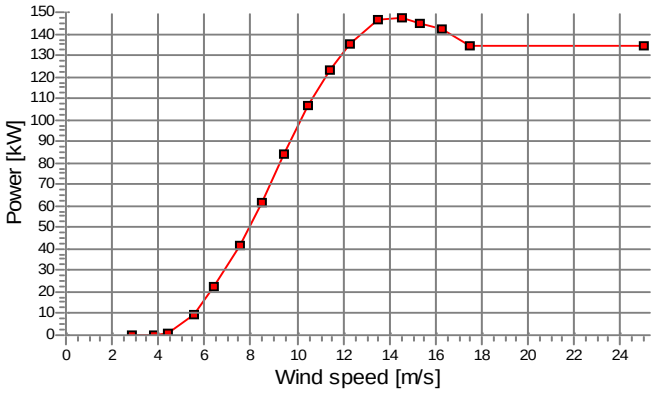
Wind speed [m/s]	1,00	2,00	3,00	4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00	13,00	14,00	15,00	16,00	17,00	18,00	19,00	20,00	21,00	22,00	23,00	24,00	25,00	26,00	27,00	28,00	29,00
Ct	0,10	0,10	0,10	0,80	0,82	0,85	0,82	0,78	0,74	0,68	0,62	0,55	0,49	0,43	0,38	0,32	0,28	0,25	0,21	0,20	0,19	0,17	0,16	0,15	0,14	0,13	0,12	0,11	0,10

HP curve comparison

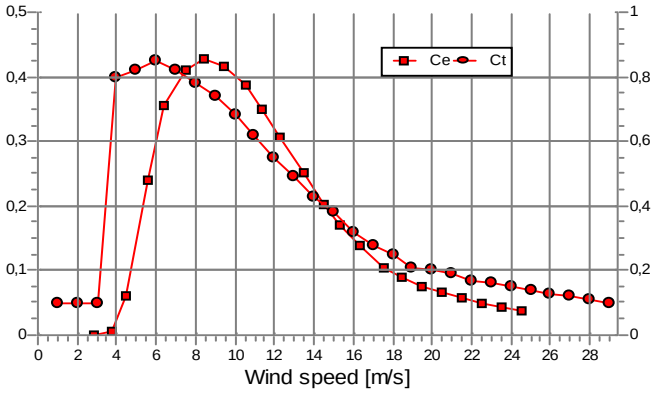
Vmean	[m/s]	5	6	7	8	9	10
HP value	[MWh]	176	284	398	501	593	681
SL 1.230 25.00 0.00	[MWh]	168	279	394	501	594	671
Check value	**[%]**	**5**	**2**	**1**	**0**	**0**	**2**

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 A/S Samfundsteknik

Source date	Creator	Created	Edited	Default
08.07.1987 00:00	User	24.09.1992 00:00	24.09.1992 00:00	No

Hub height [m]	Wind speed [m/s]	Lwa,ref [dB(A)]	Wind speed dependency [dB(A)/m/s]	Pure tones
All	8,0	99,6	0,0	No

(Memo)

Noise:

Source A/S Samfundsteknik

Source date	Creator	Created	Edited	Default
08.07.1987 00:00	User	24.09.1992 00:00	24.09.1992 00:00	No

Hub height [m]	Wind speed [m/s]	Lwa,ref [dB(A)]	Wind speed dependency [dB(A)/m/s]	Pure tones
All	5,0	97,0	0,0	No

(Memo)