NORDTANK 300 31.0 !O!

File C:\WindPRO Data\WTGs2.5\NORDTANK 300 31.0 !O!.wtg

Company	NORDTANK
Type/Version	
Rated power	300,0 kW
Secondary generator	0,0 kW
Rotor diameter	31,0 m
Tower	Tubular
Grid connection	50 Hz
Origin country	DK
Blade type	LM 15
Generator type	One generator
Rpm, rated power	33,0 rpm
Rpm, initial	0,0 rpm
Hub height(s)	31,0; 35,0; 50,0 m
Maximum blade width	0,00 m
Blade width for 90% radius	0,00 m
Valid	No
Creator	EMD
Created	1998-10-21 00:00
Edited	1998-10-21 00:00

Power curve: WINDTEST 10/93 1.225 25.00 0.00
Source WINDTEST 10/93

Source date	Creator	Created	Edited	Default	Stop windSpeed [m/s]	Air density [kg/m3]	Tip angle [°]	Power control	CT curve type
1899-12-30 00:00	EMD	1994-08-30 00:00	2000-11-15 14:20	No	25,0	1,225	0,0	Stall	Standard stall

Bericht Nr: WT126/93

Power curve

Wind speed [m/s]	4,00	5,00	5,51	5,98	6,50	7,01	7,50	8,00	8,52	8,97	9,49	9,98	10,47	10,98	11,48
Power [kW]	0,00	9,70	22,00	35,70	51,10	66,60	85,70	107,00	129,80	148,40	170,00	188,70	209,40	228,20	249,20
Ce	0,000	0,168	0,284	0,361	0,402	0,418	0,439	0,452	0,454	0,445	0,430	0,411	0,395	0,373	0,356

Wind speed [m/s]	12,00	12,49	13,00	13,51	14,01	14,49	15,00	15,49	16,40	18,23
Power [kW]	270,40	287,30	303,80	315,60	324,30	327,20	325,80	322,80	316,10	322,60
Ce	0,338	0,319	0,299	0,277	0,255	0,233	0,209	0,188	0,155	0,115

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]	339	550	769	986	1 179	1 346
WINDTEST 10/93 1.225 25.00 0.00	[MWh]	342	573	817	1 052	1 263	1 442
Check value	**[%]**	**-1**	**-4**	**-6**	**-6**	**-7**	**-7**

The table shows comparison between annual energy production calculated on basis of simplified "HP-curves" which assume that all WTG's 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.