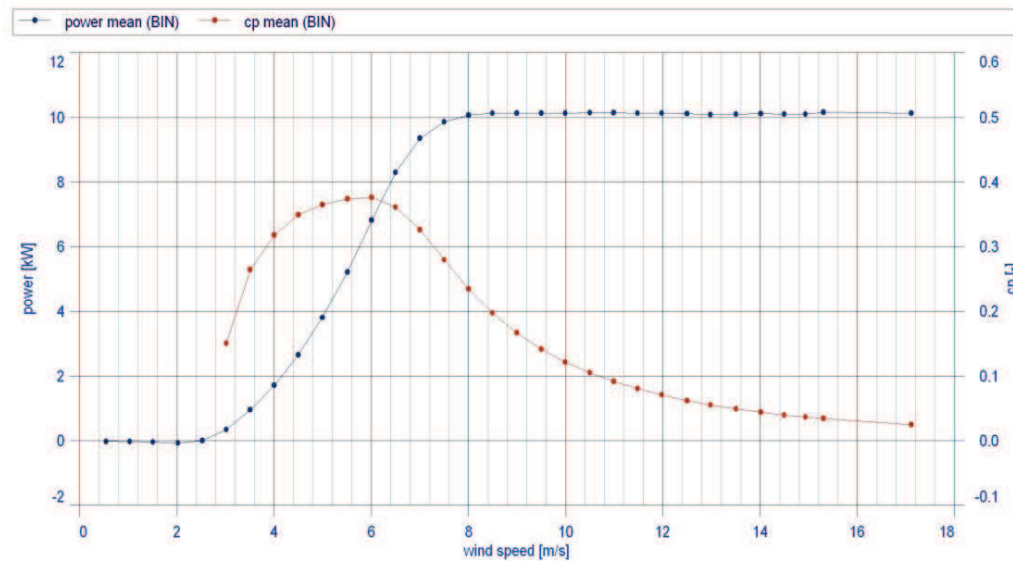
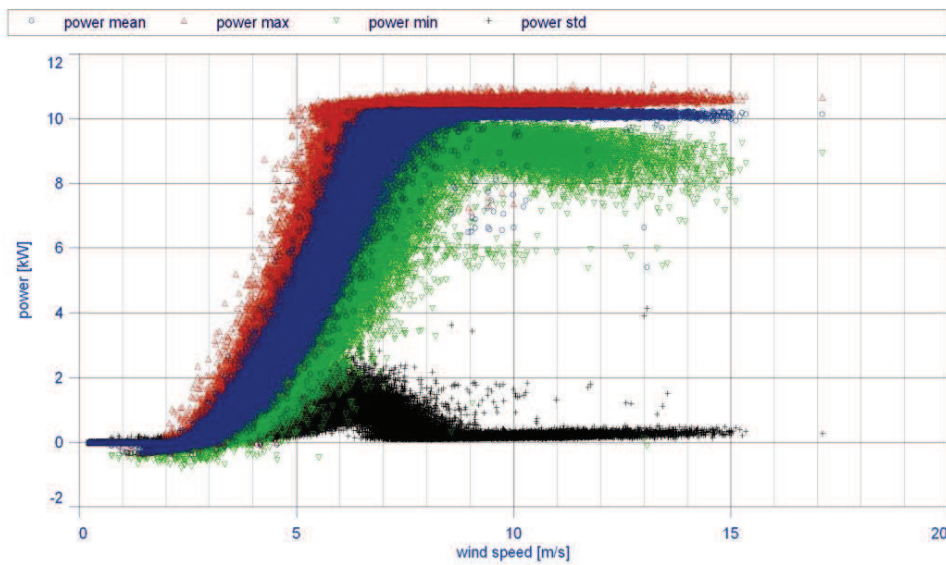



Enclosure 11 Results of the power curve

Power Performance Test based on IEC 61400-12-1			
site:	Kaiser-Wilhelm-Koog	document:	4285 10 07206 258-A-0002-1
wind turbine type:	Tozzi Nord	in charge:	Richard Frennesen B.Eng.
rated power:	10 kW	checked:	Dipl.-Ing. Klaus Buchmann
anemometer type:	Thies First Class	date:	2012-08-10
start of period:	2012-01-06, 00:00	sector 1:	182.5° to 273°
end of period:	2012-06-12, 12:00	sector 2:	-
measured data sets:	202001	sector 3:	-
used data sets:	49256	sector 4:	-

1 Hz wind speed samples averaged over 1 minute, normalised to ref. air density of 1.225 kg/m³



PP v1.3.2

Power Performance Test based on IEC 61400-12-1														
site:	Kaiser-Wilhelm-Koog			document:	4285 10 07206 258-A-0002-1									
wind turbine type:	Tozzi Nord			in charge:	Richard Frennesen B.Eng.									
rated power:	10 kW			checked:	Dipl.-Ing. Klaus Buchmann									
anemometer type:	Thies First Class			date:	2012-08-10									
start of period:	2012-01-06, 00:00			sector 1:	182.5° to 273°									
end of period:	2012-06-12, 12:00			sector 2:	-									
measured data sets:	202001			sector 3:	-									
used data sets:	49256			sector 4:	-									
1 Hz wind speed samples averaged over 1 minute, normalised to ref. air density of 1.225 kg/m³														
bin number	WS from	WS to	no. of datasets	windspeed mean	power mean	cp value	power min	power max	power std	turbulence mean	turbulence std	wind shear mean	wind shear std	
[-]	[m/s]	[m/s]	[-]	[m/s]	[kW]	[-]	[kW]	[kW]	[kW]	[%]	[%]	[-]	[-]	
1	0.25	0.75	247	0.54	-0.0	-	-0.1	-0.0	0.0	16.2	9.0	0.203	0.647	
2	0.75	1.25	571	1.03	-0.0	-	-0.3	-0.0	0.0	9.4	7.1	0.360	0.687	
3	1.25	1.75	726	1.50	-0.0	-	-0.4	-0.0	0.1	7.8	5.8	0.221	0.426	
4	1.75	2.25	905	2.02	-0.1	-	-0.4	0.1	0.1	8.0	5.4	0.202	0.215	
5	2.25	2.75	1504	2.52	-0.0	-	-0.4	0.8	0.1	8.0	4.7	0.190	0.185	
6	2.75	3.25	2268	3.01	0.3	0.151	-0.3	1.6	0.3	8.8	4.3	0.155	0.162	
7	3.25	3.75	2812	3.51	1.0	0.264	-0.2	2.8	0.4	8.8	3.7	0.161	0.131	
8	3.75	4.25	3072	4.00	1.7	0.318	-0.1	4.2	0.5	8.9	3.4	0.163	0.126	
9	4.25	4.75	3048	4.50	2.7	0.349	-0.1	5.8	0.6	8.8	3.1	0.151	0.114	
10	4.75	5.25	2660	4.99	3.8	0.365	0.6	8.0	0.8	9.1	3.0	0.130	0.101	
11	5.25	5.75	2827	5.51	5.2	0.374	1.5	9.8	1.0	9.3	2.8	0.131	0.096	
12	5.75	6.25	3135	6.01	6.8	0.376	3.1	10.2	1.1	9.2	2.7	0.134	0.090	
13	6.25	6.75	3049	6.50	8.3	0.361	4.1	10.3	1.0	9.2	2.5	0.138	0.084	
14	6.75	7.25	2898	7.00	9.3	0.326	6.2	10.3	0.7	9.1	2.4	0.136	0.076	
15	7.25	7.75	2816	7.50	9.9	0.280	6.3	10.3	0.4	9.4	2.3	0.139	0.069	
16	7.75	8.25	2978	8.00	10.1	0.235	6.7	10.3	0.2	9.3	2.1	0.147	0.067	
17	8.25	8.75	2956	8.49	10.1	0.198	7.0	10.3	0.1	9.3	2.0	0.149	0.066	
18	8.75	9.25	2365	8.99	10.1	0.167	6.5	10.3	0.2	9.3	2.0	0.146	0.064	
19	9.25	9.75	1902	9.50	10.1	0.141	6.5	10.3	0.2	9.5	2.1	0.142	0.059	
20	9.75	10.25	1658	9.99	10.1	0.121	6.6	10.3	0.2	9.6	2.0	0.147	0.056	
21	10.25	10.75	1465	10.50	10.1	0.105	7.5	10.3	0.1	9.6	1.9	0.147	0.052	
22	10.75	11.25	1205	10.99	10.1	0.091	9.7	10.3	0.1	9.5	1.9	0.147	0.051	
23	11.25	11.75	903	11.48	10.1	0.080	9.0	10.3	0.1	9.7	1.9	0.148	0.049	
24	11.75	12.25	514	11.98	10.1	0.070	8.6	10.3	0.1	9.5	1.9	0.145	0.048	
25	12.25	12.75	290	12.50	10.1	0.062	9.6	10.3	0.1	9.5	2.0	0.144	0.050	
26	12.75	13.25	182	12.98	10.1	0.055	5.4	10.2	0.4	9.7	1.9	0.143	0.049	
27	13.25	13.75	134	13.50	10.1	0.049	9.3	10.2	0.1	9.7	2.0	0.145	0.049	
28	13.75	14.25	78	14.02	10.1	0.044	10.0	10.2	0.1	10.0	2.3	0.137	0.043	
29	14.25	14.75	43	14.50	10.1	0.040	9.9	10.2	0.1	9.3	1.9	0.143	0.042	
30	14.75	15.25	21	14.94	10.1	0.036	9.9	10.2	0.1	9.0	1.6	0.134	0.037	
31	15.25	15.75	2	15.31	10.2	0.034	10.1	10.2	0.0	9.3	0.9	0.151	0.036	
32	15.75	16.25	-	-	-	-	-	-	-	-	-	-	-	
33	16.25	16.75	-	-	-	-	-	-	-	-	-	-	-	
34	16.75	17.25	1	17.11	10.1	0.024	10.1	10.1	0.0	7.0	0.0	0.126	0.000	
35	17.25	17.75	-	-	-	-	-	-	-	-	-	-	-	
36	17.75	18.25	-	-	-	-	-	-	-	-	-	-	-	
37	18.25	18.75	-	-	-	-	-	-	-	-	-	-	-	
38	18.75	19.25	-	-	-	-	-	-	-	-	-	-	-	
39	19.25	19.75	-	-	-	-	-	-	-	-	-	-	-	
40	19.75	20.25	-	-	-	-	-	-	-	-	-	-	-	
41	20.25	20.75	-	-	-	-	-	-	-	-	-	-	-	
42	20.75	21.25	-	-	-	-	-	-	-	-	-	-	-	
43	21.25	21.75	-	-	-	-	-	-	-	-	-	-	-	
44	21.75	22.25	-	-	-	-	-	-	-	-	-	-	-	
45	22.25	22.75	-	-	-	-	-	-	-	-	-	-	-	
46	22.75	23.25	-	-	-	-	-	-	-	-	-	-	-	
47	23.25	23.75	-	-	-	-	-	-	-	-	-	-	-	
48	23.75	24.25	-	-	-	-	-	-	-	-	-	-	-	
49	24.25	24.75	-	-	-	-	-	-	-	-	-	-	-	
50	24.75	25.25	-	-	-	-	-	-	-	-	-	-	-	
51	25.25	25.75	-	-	-	-	-	-	-	-	-	-	-	
52	25.75	26.25	-	-	-	-	-	-	-	-	-	-	-	
53	26.25	26.75	-	-	-	-	-	-	-	-	-	-	-	
54	26.75	27.25	-	-	-	-	-	-	-	-	-	-	-	
55	27.25	27.75	-	-	-	-	-	-	-	-	-	-	-	
56	27.75	28.25	-	-	-	-	-	-	-	-	-	-	-	
57	28.25	28.75	-	-	-	-	-	-	-	-	-	-	-	
58	28.75	29.25	-	-	-	-	-	-	-	-	-	-	-	
59	29.25	29.75	-	-	-	-	-	-	-	-	-	-	-	
60	29.75	30.25	-	-	-	-	-	-	-	-	-	-	-	