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N° COMMESSA
1538

REALIZZAZIONE DI UN IMPIANTO EOLICO IN COMUNE DI CALICE LIGURE (SV) DENOMINATO "STRINATE"

PROGETTO DEFINITIVO PER AUTORIZZAZIONE

ELABORATO

SCHEDA TECNICA DEL GRUPPO DI PRODUZIONE

CODICE ELABORATO
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Performance Specification

V117-3.45 MW 50/60 Hz



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1 General Description

The Vestas V117-3.45 MW wind turbine is a pitch regulated upwind turbine with active yaw and a three-blade rotor. The Vestas V117-3.45 MW turbine has a rotor diameter of 117 m and a rated power of 3.45 MW.

Vestas offers optional Power Optimized (PO) modes up to 3.6 MW for the V117-3.45 MW variant. Power curves, Ct curves and sound curves for these Power Optimized modes are available in Performance Specification DMS 0056-4781.

2 Type Approvals and Available Hub Heights

The standard turbine is type certified according to the certification standards and available hub heights listed below:

Certification	Wind Class	Hub Height
IEC61400-22	IEC IB	80 m / 91.5 m / 116.5 m
	IEC IIA	116.5 m

Table 2-1: Type approval data and available hub heights

3 Operational Envelope and Performance Guidelines

Actual climate and site conditions have many variables and should be considered in evaluating actual turbine performance. The design and operating parameters set forth in this section do not constitute warranties, guarantees, or representations as to turbine performance at actual sites.

3.1 Climate and Site Conditions

The standard turbine is designed for the wind climate conditions listed below. Values refer to hub height.

Wind Climate	IEC IB	IEC IIA
Extr Wind Speed (10 min average), V_{50}	50.0 m/s	42.5 m/s
Survival Wind Speed (3 s gust), V_{e50}	70.0 m/s	59.5 m/s

Table 3-1: Extreme design parameters – IEC

Wind Climate	IEC IB	IEC IIA
Wind Speed (10 min average), V_{ave}	10.0 m/s	8.5 m/s
Weibull Scale Factor, C	11.3 m/s	9.6 m/s
Weibull Shape Factor, k	2.0	2.0
Turbulence Intensity According to IEC 61400-1, Including Wind Farm Turbulence (@15 m/s) I_{ref} (90% quantile)	16%	18%
Wind Shear, α	0.20	0.20
Inflow Angle (vertical)	8°	8°

Table 3-2: Average design parameters – IEC

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3.1.1 Complex Terrain

Classification of complex terrain according to IEC 61400-1:2005 Chapter 11.2.

For sites classified as complex, appropriate measures are to be included in site assessment. Positioning of each turbine must be verified via Vestas Site Check.

3.1.2 Altitude

The turbine is designed for use at altitudes up to 1000 m above sea level as standard and optional up to 2000 m above sea level.

3.1.3 Wind Power Plant Layout

Turbine spacing is to be evaluated site-specifically. Spacing below two rotor diameters (2D) may require sector-wise curtailment.

NOTE As evaluation of climate and site conditions is complex, consult Vestas for every project.

If conditions exceed the above parameters, Vestas must be consulted.

3.2 Operational Envelope – Wind

Values refer to hub height and are determined by the sensors and control system of the turbine.

Wind climate	IEC IB	IEC IIA
Cut-In, V_{in}	3.0 m/s	3.0 m/s
Cut-Out (10 min exponential avg.), V_{out}	25.0 m/s	25.0 m/s
Re-Cut In (10 min exponential avg.)	23.0 m/s	23.0 m/s

Table 3-3: Operational envelope – wind – IEC

3.3 Operational Envelope – Wind (HWO)

Optionally, the turbine can be offered with the High Wind Operation (HWO) control feature. The HWO control feature allows the turbine to operate up to the extended cut-out wind speeds listed in Table 3-4, p. 6, with a controlled derating of power and speed. The power curves associated with optional HWO control are found in Sections 6, 7 and 8. Values refer to hub height and are determined by the sensors and control system of the turbine.

Wind climate	IEC IB	IEC IIA
Cut-In, V_{in}	3 m/s	3 m/s
Cut-Out (10 min exponential avg.), V_{out}	30.0 m/s	30.0 m/s
Re-Cut In (10 min exponential avg.)	28.0 m/s	28.0 m/s

Table 3-4: Operational envelope – wind – IEC (High Wind Operation)

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3.4 Operational Envelope – Conditions for Power Curve and Ct Values (at Hub Height)

Consult Section 6, p. 11 for power curves and C_t values.

Conditions for Power Curve and C_t Values (at Hub Height)	
Wind Shear, *α*	0.00-0.30 (10 minute average)
Turbulence Intensity, *I*	6-12% (10 minute average)
Blades	Clean
Rain	No
Ice/Snow on Blades	No
Leading Edge	No damage
Terrain	IEC 61400-12-1
Inflow Angle (Vertical)	0 ±2°
Grid Voltage	Nominal Voltage ±2.5%
Grid Frequency	Nominal Frequency ±0.5 Hz
Grid Reactive Power (at LV-side of turbine transformer)	Power Factor 1.0

Table 3-5: Conditions for power curve and Ct values

3.5 Sound Modes

The sound modes listed below are available for the turbine.

Sound modes			
Mode No.	**Maximum Sound Level**	**Serrated trailing edges**	**Available hub heights**
0	106.8 dBA	Yes (standard)	80 m, 91.5 m, (116.5 m IEC IB + IIA)
0-0S	109.3 dBA	No (option)	80 m, 91.5 m, (116.5 m IEC IB + IIA)

Table 3-6: Available sound performance

NOTE The turbine is as standard equipped with serrated trailing edges on the blades. Optionally, Mode 0-0S can be offered without serrated trailing edges mounted on the blades.

In addition, Sound Optimized (SO) modes as listed below are available as options for the turbine.

Sound Optimized (SO) modes			
Mode No.	**Maximum Sound Level**	**Serrated trailing edges**	**Available hub heights**
SO1	105.2 dBA	Yes	80 m, 91.5 m, (116.5 m IEC IB + IIA)
SO2	103.7 dBA	Yes	80 m, 91.5 m, (116.5 m IEC IIA)
SO3	102.4 dBA	Yes	80 m, 91.5 m

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Sound Optimized (SO) modes			
SO4	99.8 dBA	Yes	80 m, 91.5 m, (116.5 m IEC IB)
SO5	104.4 dBA	Yes	80 m, 91.5 m, (116.5 m IEC IB + IIA)

Table 3-7: Available Sound Optimized modes

NOTE Sound Optimized (SO) modes are only available with serrated trailing edges on the blades. SO2 is not available for hub height 116.5 m in IEC IB climate. SO3 is not available for hub height 116.5 m. SO4 is not available for hub height 116.5 m in IEC IIA climate. For further details on sound performance, please contact Vestas Wind Systems A/S.

3.6 Load Modes

The Load Optimized (LO) modes listed below are available for the turbine.

Load Optimized (LO) modes				
Mode No.	**Power**	**Maximum Sound Level**	**Serrated trailing edges**	**Available hub heights**
LO1	3.3 MW	105.8 dBA	Yes	80 m, 91.5 m, (116.5 m IEC IB + IIA)
LO2	3.0 MW	105.8 dBA	Yes	80 m, 91.5 m, (116.5 m IEC IB + IIA)

Table 3-8: Available Load Optimized modes

NOTE Load Optimized (LO) modes are only available with serrated trailing edges on the blades.

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4 Drawings

4.1 Structural Design – Illustration of Outer Dimensions

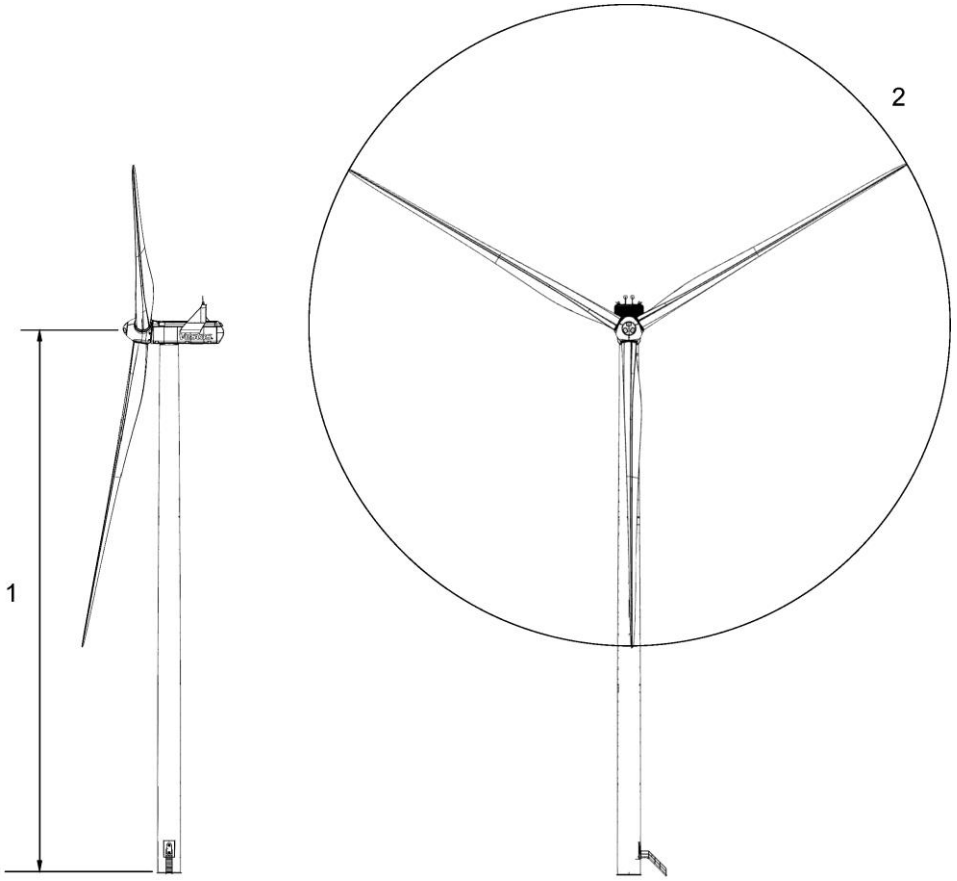


Figure 4-1: Illustration of outer dimensions – structure

1 Hub height 80/91.5/116.5 m

2 Diameter: 117 m

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- The performance specifications described in this document apply to the current version of the V117-3.45 MW wind turbine. Updated versions of the V117-3.45 MW wind turbine, which may be manufactured in the future, may differ from these performance specifications. In the event that Vestas supplies an updated version of the V117-3.45 MW wind, Vestas will provide an updated performance specification applicable to the updated version.
- All listed start/stop parameters (e. g. wind speeds) are equipped with hysteresis control. This can, in certain borderline situations, result in turbine stops even though the ambient conditions are within the listed operation parameters.
- This document, Performance Specification, is not an offer for sale, and does not contain any guarantee, warranty and/or verification of the power curve and sound (including, without limitation, the power curve and sound verification method). Any guarantee, warranty and/or verification of the power curve and sound (including, without limitation, the power curve and sound verification method) must be agreed to separately in writing.

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6 Power Curves, Ct Values and Sound Curves Mode 0/0-0S

6.1 Power Curves, Mode 0/0-0S

Air density [kg/m³]														
Wind speed [m/s]	**1.225**	**0.95**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**22**	9	10	11	12	13	15	16	17	18	19	21	23	24
3.5	**78**	49	52	54	57	59	62	65	67	70	73	75	81	83
4.0	**150**	105	110	114	118	122	126	130	134	138	142	146	154	158
4.5	**237**	173	178	184	190	196	202	208	213	219	225	231	242	248
5.0	**340**	252	260	268	276	284	292	300	308	316	324	332	348	356
5.5	**466**	349	360	370	381	392	402	413	423	434	445	455	476	487
6.0	**617**	467	480	494	508	521	535	549	562	576	590	603	631	644
6.5	**796**	605	622	640	657	675	692	709	727	744	761	779	814	831
7.0	**1006**	768	790	811	833	855	877	898	920	942	963	985	1028	1050
7.5	**1247**	955	982	1008	1035	1062	1088	1115	1142	1168	1195	1221	1274	1300
8.0	**1522**	1169	1201	1233	1266	1298	1330	1362	1394	1426	1458	1490	1554	1586
8.5	**1831**	1411	1450	1488	1527	1565	1603	1642	1680	1718	1756	1794	1869	1906
9.0	**2178**	1684	1730	1775	1820	1866	1911	1956	2001	2046	2090	2134	2222	2266
9.5	**2544**	1983	2035	2088	2140	2192	2244	2294	2346	2396	2446	2495	2592	2640
10.0	**2905**	2302	2360	2418	2475	2533	2588	2643	2698	2753	2804	2855	2952	2999
10.5	**3201**	2619	2680	2740	2800	2861	2914	2967	3020	3073	3116	3158	3234	3267
11.0	**3374**	2915	2970	3026	3081	3136	3177	3218	3259	3300	3325	3349	3388	3403
11.5	**3435**	3168	3209	3251	3293	3335	3354	3374	3393	3413	3420	3428	3438	3442
12.0	**3448**	3345	3364	3383	3403	3422	3427	3433	3438	3444	3445	3446	3449	3449
12.5	**3450**	3422	3428	3434	3439	3445	3446	3447	3448	3449	3449	3450	3450	3450
13.0	**3450**	3444	3446	3447	3448	3449	3450	3450	3450	3450	3450	3450	3450	3450
13.5	**3450**	3446	3447	3448	3449	3450	3450	3450	3450	3450	3450	3450	3450	3450
14.0	**3450**	3449	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
14.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
15.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
15.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
16.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
16.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
17.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
17.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
18.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
18.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
19.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
19.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
20.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
20.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
21.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
21.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
22.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
22.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
23.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
23.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
24.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
24.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
25.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450

Table 6-1: Power curve, Mode 0/0-0S

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6.2 Ct Values, Mode 0/0-0S

Air density kg/m³														
Wind speed [m/s]	**1.225**	**0.950**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**0.873**	0.878	0.878	0.877	0.877	0.877	0.876	0.876	0.875	0.875	0.874	0.874	0.873	0.873
3.5	**0.849**	0.853	0.853	0.852	0.852	0.851	0.851	0.851	0.850	0.850	0.850	0.849	0.849	0.848
4.0	**0.834**	0.839	0.839	0.838	0.838	0.837	0.837	0.837	0.836	0.836	0.836	0.835	0.834	0.834
4.5	**0.828**	0.828	0.827	0.827	0.827	0.827	0.827	0.827	0.828	0.828	0.828	0.828	0.828	0.829
5.0	**0.827**	0.826	0.827	0.827	0.827	0.827	0.827	0.827	0.827	0.828	0.827	0.827	0.827	0.827
5.5	**0.825**	0.829	0.828	0.828	0.828	0.828	0.827	0.827	0.827	0.826	0.826	0.825	0.824	0.824
6.0	**0.820**	0.825	0.824	0.824	0.823	0.823	0.823	0.822	0.821	0.821	0.820	0.820	0.819	0.818
6.5	**0.816**	0.822	0.821	0.821	0.820	0.820	0.819	0.819	0.818	0.818	0.817	0.817	0.815	0.815
7.0	**0.815**	0.823	0.822	0.822	0.821	0.820	0.819	0.819	0.818	0.817	0.817	0.816	0.815	0.814
7.5	**0.804**	0.814	0.813	0.812	0.811	0.811	0.810	0.809	0.808	0.807	0.806	0.805	0.803	0.802
8.0	**0.794**	0.806	0.805	0.804	0.803	0.802	0.801	0.800	0.798	0.797	0.796	0.795	0.793	0.792
8.5	**0.790**	0.804	0.803	0.801	0.800	0.799	0.798	0.797	0.795	0.794	0.793	0.791	0.789	0.787
9.0	**0.789**	0.806	0.805	0.803	0.802	0.800	0.799	0.797	0.796	0.794	0.792	0.791	0.787	0.785
9.5	**0.772**	0.805	0.803	0.800	0.798	0.796	0.792	0.789	0.786	0.783	0.780	0.776	0.768	0.764
10.0	**0.733**	0.790	0.786	0.782	0.777	0.773	0.768	0.762	0.757	0.752	0.745	0.739	0.726	0.719
10.5	**0.666**	0.750	0.743	0.737	0.731	0.724	0.716	0.709	0.701	0.693	0.684	0.675	0.655	0.645
11.0	**0.580**	0.693	0.684	0.676	0.667	0.658	0.648	0.637	0.627	0.617	0.605	0.593	0.568	0.555
11.5	**0.494**	0.631	0.620	0.609	0.597	0.586	0.573	0.559	0.546	0.533	0.520	0.507	0.482	0.470
12.0	**0.421**	0.565	0.551	0.536	0.522	0.508	0.494	0.481	0.468	0.454	0.443	0.432	0.411	0.401
12.5	**0.362**	0.492	0.478	0.464	0.450	0.436	0.424	0.413	0.402	0.390	0.381	0.372	0.354	0.346
13.0	**0.316**	0.426	0.413	0.401	0.389	0.377	0.367	0.358	0.349	0.339	0.332	0.324	0.310	0.303
13.5	**0.281**	0.373	0.363	0.352	0.342	0.332	0.324	0.316	0.308	0.300	0.294	0.287	0.275	0.269
14.0	**0.249**	0.328	0.319	0.311	0.302	0.293	0.286	0.280	0.273	0.266	0.260	0.255	0.244	0.239
14.5	**0.223**	0.291	0.283	0.276	0.269	0.261	0.255	0.249	0.243	0.238	0.233	0.228	0.219	0.214
15.0	**0.199**	0.259	0.252	0.246	0.239	0.233	0.228	0.223	0.217	0.212	0.208	0.204	0.196	0.192
15.5	**0.180**	0.233	0.227	0.221	0.216	0.210	0.205	0.201	0.196	0.192	0.188	0.184	0.177	0.174
16.0	**0.164**	0.210	0.205	0.200	0.195	0.190	0.186	0.182	0.178	0.174	0.170	0.167	0.161	0.158
16.5	**0.149**	0.191	0.186	0.182	0.177	0.173	0.169	0.166	0.162	0.158	0.155	0.152	0.146	0.144
17.0	**0.137**	0.174	0.170	0.166	0.162	0.158	0.155	0.151	0.148	0.145	0.142	0.139	0.134	0.132
17.5	**0.125**	0.159	0.156	0.152	0.148	0.145	0.142	0.139	0.136	0.133	0.130	0.128	0.123	0.121
18.0	**0.115**	0.146	0.143	0.140	0.136	0.133	0.130	0.128	0.125	0.122	0.120	0.118	0.113	0.111
18.5	**0.107**	0.135	0.132	0.129	0.126	0.123	0.120	0.118	0.115	0.113	0.111	0.109	0.105	0.103
19.0	**0.098**	0.124	0.121	0.118	0.116	0.113	0.111	0.108	0.106	0.104	0.102	0.100	0.097	0.095
19.5	**0.091**	0.115	0.112	0.110	0.107	0.105	0.103	0.101	0.098	0.096	0.095	0.093	0.090	0.088
20.0	**0.085**	0.106	0.104	0.102	0.100	0.097	0.095	0.094	0.092	0.090	0.088	0.087	0.084	0.082
20.5	**0.079**	0.099	0.097	0.095	0.093	0.091	0.089	0.087	0.085	0.084	0.082	0.081	0.078	0.077
21.0	**0.074**	0.093	0.091	0.089	0.087	0.085	0.083	0.081	0.080	0.078	0.077	0.076	0.073	0.072
21.5	**0.070**	0.087	0.085	0.084	0.082	0.080	0.078	0.077	0.075	0.074	0.073	0.071	0.069	0.068
22.0	**0.066**	0.082	0.080	0.078	0.077	0.075	0.074	0.072	0.071	0.069	0.068	0.067	0.065	0.064
22.5	**0.062**	0.077	0.075	0.074	0.072	0.070	0.069	0.068	0.067	0.065	0.064	0.063	0.061	0.060
23.0	**0.058**	0.072	0.070	0.069	0.067	0.066	0.065	0.063	0.062	0.061	0.060	0.059	0.057	0.056
23.5	**0.055**	0.068	0.066	0.065	0.063	0.062	0.061	0.06	0.059	0.058	0.057	0.056	0.054	0.053
24.0	**0.052**	0.064	0.062	0.061	0.060	0.059	0.058	0.057	0.055	0.054	0.054	0.053	0.051	0.050
24.5	**0.049**	0.060	0.059	0.058	0.057	0.055	0.054	0.053	0.052	0.052	0.051	0.050	0.048	0.048
25.0	**0.046**	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.050	0.049	0.048	0.047	0.046	0.045

Table 6-2: C_t values, Mode 0/0-0S

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

6.3 Sound Curves, Mode 0/0-0S

Sound Power Level at Hub Height		
Conditions for Sound Power Level:	**Measurement standard IEC 61400-11 ed. 3 Maximum turbulence at hub height: 30% Inflow angle (vertical): 0 ±2° Air density: 1.225 kg/m^3**	
Wind speed at hub height [m/s]	**Sound Power Level at Hub Height [dBA] Mode 0 (Blades with serrated trailing edge)**	**Sound Power Level at Hub Height [dBA] Mode 0-0S (Blades without serrated trailing edge)**
3	91.8	93.3
4	92.1	93.7
5	93.9	96.0
6	97.1	99.6
7	100.4	103.0
8	103.4	106.1
9	106.0	108.6
10	106.8	109.3
11	106.8	109.3
12	106.8	109.3
13	106.8	109.3
14	106.8	109.3
15	106.8	109.3
16	106.8	109.3
17	106.8	109.3
18	106.8	109.3
19	106.8	109.3
20	106.8	109.3

Table 6-3: Sound curves, Mode 0/0-0S

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

6.4 Power Curves, Mode 0/0-0S (HWO)

Air density [kg/m³]														
Wind speed [m/s]	**1.225**	**0.95**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**22**	9	10	11	12	13	15	16	17	18	19	21	23	24
3.5	**78**	49	52	54	57	59	62	65	67	70	73	75	81	83
4.0	**150**	105	110	114	118	122	126	130	134	138	142	146	154	158
4.5	**237**	173	178	184	190	196	202	208	213	219	225	231	242	248
5.0	**340**	252	260	268	276	284	292	300	308	316	324	332	348	356
5.5	**466**	349	360	370	381	392	402	413	423	434	445	455	476	487
6.0	**617**	467	480	494	508	521	535	549	562	576	590	603	631	645
6.5	**796**	605	622	640	657	675	692	709	727	744	762	779	814	831
7.0	**1006**	768	790	811	833	855	877	898	920	942	963	985	1028	1050
7.5	**1247**	955	982	1008	1035	1062	1088	1115	1142	1168	1195	1221	1274	1300
8.0	**1522**	1169	1201	1233	1266	1298	1330	1362	1394	1427	1458	1490	1554	1586
8.5	**1831**	1411	1450	1488	1527	1565	1604	1642	1680	1718	1756	1794	1869	1906
9.0	**2178**	1684	1730	1775	1820	1866	1911	1956	2001	2046	2090	2134	2222	2266
9.5	**2544**	1983	2035	2088	2140	2193	2244	2295	2346	2397	2446	2495	2592	2640
10.0	**2905**	2302	2360	2418	2475	2533	2588	2643	2698	2753	2804	2855	2952	2999
10.5	**3201**	2619	2680	2740	2801	2861	2914	2967	3020	3073	3116	3159	3234	3267
11.0	**3374**	2915	2970	3026	3081	3137	3177	3218	3259	3300	3325	3349	3389	3403
11.5	**3435**	3168	3209	3251	3293	3335	3354	3374	3393	3413	3420	3428	3438	3442
12.0	**3448**	3345	3364	3383	3403	3422	3427	3433	3438	3444	3445	3447	3449	3449
12.5	**3450**	3422	3428	3434	3439	3445	3446	3447	3448	3449	3449	3450	3450	3450
13.0	**3450**	3445	3446	3447	3448	3449	3450	3450	3450	3450	3450	3450	3450	3450
13.5	**3450**	3447	3447	3448	3449	3450	3450	3450	3450	3450	3450	3450	3450	3450
14.0	**3450**	3449	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
14.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
15.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
15.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
16.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
16.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
17.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
17.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
18.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
18.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
19.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
19.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
20.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
20.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
21.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
21.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
22.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
22.5	**3449**	3445	3446	3446	3447	3447	3447	3448	3448	3448	3449	3449	3449	3449
23.0	**3422**	3386	3390	3393	3397	3400	3403	3407	3410	3413	3416	3419	3424	3427
23.5	**3328**	3256	3263	3269	3276	3283	3290	3296	3302	3309	3315	3321	3333	3339
24.0	**3158**	3061	3070	3079	3088	3097	3106	3114	3123	3132	3141	3149	3167	3176
24.5	**2931**	2827	2836	2845	2854	2864	2873	2882	2891	2900	2911	2921	2940	2950
25.0	**2676**	2585	2593	2601	2609	2618	2625	2633	2641	2649	2658	2667	2685	2694
25.5	**2430**	2347	2354	2362	2369	2376	2384	2391	2399	2406	2414	2422	2437	2445
26.0	**2171**	2101	2106	2112	2117	2123	2131	2138	2146	2154	2159	2165	2178	2186
26.5	**1918**	1856	1862	1868	1874	1880	1885	1890	1894	1899	1906	1912	1923	1929
27.0	**1664**	1614	1619	1624	1628	1633	1638	1642	1646	1650	1655	1659	1669	1674
27.5	**1427**	1379	1383	1387	1391	1396	1399	1403	1407	1411	1417	1422	1430	1434
28.0	**1224**	1191	1195	1199	1203	1207	1209	1211	1214	1216	1219	1221	1228	1232
28.5	**1090**	1077	1078	1079	1080	1081	1082	1084	1085	1086	1087	1088	1091	1093
29.0	**1046**	1043	1043	1043	1044	1044	1044	1044	1044	1045	1045	1045	1046	1047
29.5	**1036**	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1037
30.0	**1035**	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035

Table 6-4: Power curve, Mode 0/0-0S (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

6.5 Ct Values, Mode 0/0-0S (HWO)

Air density kg/m³														
Wind speed [m/s]	**1.225**	**0.950**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**0.873**	0.878	0.878	0.877	0.877	0.877	0.876	0.876	0.875	0.875	0.874	0.874	0.873	0.873
3.5	**0.849**	0.853	0.853	0.852	0.852	0.851	0.851	0.851	0.850	0.850	0.850	0.849	0.849	0.848
4.0	**0.834**	0.839	0.839	0.838	0.838	0.837	0.837	0.837	0.836	0.836	0.836	0.835	0.834	0.834
4.5	**0.828**	0.828	0.827	0.827	0.827	0.827	0.827	0.827	0.828	0.828	0.828	0.828	0.828	0.829
5.0	**0.827**	0.826	0.827	0.827	0.827	0.827	0.827	0.827	0.827	0.828	0.827	0.827	0.827	0.827
5.5	**0.825**	0.829	0.828	0.828	0.828	0.828	0.827	0.827	0.827	0.826	0.826	0.825	0.824	0.824
6.0	**0.820**	0.825	0.824	0.824	0.823	0.823	0.823	0.822	0.821	0.821	0.820	0.820	0.819	0.818
6.5	**0.816**	0.822	0.821	0.821	0.820	0.820	0.819	0.819	0.818	0.818	0.817	0.817	0.815	0.815
7.0	**0.815**	0.823	0.822	0.822	0.821	0.820	0.819	0.819	0.818	0.817	0.817	0.816	0.815	0.814
7.5	**0.804**	0.814	0.813	0.812	0.811	0.811	0.810	0.809	0.808	0.807	0.806	0.805	0.803	0.802
8.0	**0.794**	0.806	0.805	0.804	0.803	0.802	0.801	0.800	0.798	0.797	0.796	0.795	0.793	0.792
8.5	**0.790**	0.804	0.803	0.801	0.800	0.799	0.798	0.797	0.795	0.794	0.793	0.791	0.789	0.787
9.0	**0.789**	0.806	0.805	0.803	0.802	0.800	0.799	0.797	0.796	0.794	0.792	0.791	0.787	0.785
9.5	**0.772**	0.805	0.803	0.800	0.798	0.796	0.792	0.789	0.786	0.783	0.780	0.776	0.768	0.764
10.0	**0.733**	0.790	0.786	0.782	0.777	0.773	0.768	0.762	0.757	0.752	0.745	0.739	0.726	0.719
10.5	**0.666**	0.750	0.743	0.737	0.731	0.724	0.716	0.709	0.701	0.693	0.684	0.675	0.655	0.645
11.0	**0.580**	0.693	0.684	0.676	0.667	0.658	0.648	0.637	0.627	0.617	0.605	0.593	0.568	0.555
11.5	**0.494**	0.631	0.620	0.609	0.597	0.586	0.573	0.559	0.546	0.533	0.520	0.507	0.482	0.470
12.0	**0.421**	0.565	0.551	0.536	0.522	0.508	0.494	0.481	0.468	0.454	0.443	0.432	0.411	0.401
12.5	**0.362**	0.492	0.478	0.464	0.450	0.436	0.424	0.413	0.402	0.390	0.381	0.372	0.354	0.346
13.0	**0.316**	0.426	0.413	0.401	0.389	0.377	0.367	0.358	0.349	0.339	0.332	0.324	0.310	0.303
13.5	**0.281**	0.373	0.363	0.352	0.342	0.332	0.324	0.316	0.308	0.300	0.294	0.287	0.275	0.269
14.0	**0.249**	0.328	0.319	0.311	0.302	0.293	0.286	0.280	0.273	0.266	0.260	0.255	0.244	0.239
14.5	**0.223**	0.291	0.283	0.276	0.269	0.261	0.255	0.249	0.243	0.238	0.233	0.228	0.219	0.214
15.0	**0.199**	0.259	0.252	0.246	0.239	0.233	0.228	0.223	0.217	0.212	0.208	0.204	0.196	0.192
15.5	**0.180**	0.233	0.227	0.221	0.216	0.210	0.205	0.201	0.196	0.192	0.188	0.184	0.177	0.174
16.0	**0.164**	0.210	0.205	0.200	0.195	0.190	0.186	0.182	0.178	0.174	0.170	0.167	0.161	0.158
16.5	**0.149**	0.191	0.186	0.182	0.177	0.173	0.169	0.166	0.162	0.158	0.155	0.152	0.146	0.144
17.0	**0.137**	0.174	0.170	0.166	0.162	0.158	0.155	0.151	0.148	0.145	0.142	0.139	0.134	0.132
17.5	**0.125**	0.159	0.156	0.152	0.148	0.145	0.142	0.139	0.136	0.133	0.130	0.128	0.123	0.121
18.0	**0.115**	0.146	0.143	0.140	0.136	0.133	0.130	0.128	0.125	0.122	0.120	0.118	0.113	0.111
18.5	**0.107**	0.135	0.132	0.129	0.126	0.123	0.120	0.118	0.115	0.113	0.111	0.109	0.105	0.103
19.0	**0.098**	0.124	0.121	0.118	0.116	0.113	0.111	0.108	0.106	0.104	0.102	0.100	0.097	0.095
19.5	**0.091**	0.115	0.112	0.110	0.107	0.105	0.103	0.101	0.098	0.096	0.095	0.093	0.090	0.088
20.0	**0.085**	0.106	0.104	0.102	0.100	0.097	0.095	0.094	0.092	0.090	0.088	0.087	0.084	0.082
20.5	**0.079**	0.099	0.097	0.095	0.093	0.091	0.089	0.087	0.085	0.084	0.082	0.081	0.078	0.077
21.0	**0.074**	0.093	0.091	0.089	0.087	0.085	0.083	0.081	0.080	0.078	0.077	0.076	0.073	0.072
21.5	**0.070**	0.087	0.085	0.084	0.082	0.080	0.078	0.077	0.075	0.074	0.073	0.071	0.069	0.068
22.0	**0.066**	0.082	0.080	0.078	0.077	0.075	0.074	0.072	0.071	0.069	0.068	0.067	0.065	0.064
22.5	**0.062**	0.077	0.075	0.073	0.072	0.070	0.069	0.068	0.066	0.065	0.064	0.063	0.061	0.060
23.0	**0.058**	0.070	0.069	0.068	0.066	0.065	0.064	0.063	0.062	0.060	0.060	0.059	0.057	0.056
23.5	**0.053**	0.064	0.063	0.062	0.060	0.059	0.058	0.057	0.056	0.055	0.055	0.054	0.052	0.051
24.0	**0.048**	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.051	0.050	0.049	0.048	0.047	0.046
24.5	**0.042**	0.050	0.049	0.048	0.047	0.047	0.046	0.045	0.044	0.044	0.043	0.043	0.042	0.041
25.0	**0.037**	0.043	0.043	0.042	0.041	0.040	0.040	0.039	0.039	0.038	0.038	0.037	0.036	0.036
25.5	**0.032**	0.038	0.037	0.037	0.036	0.035	0.035	0.034	0.034	0.033	0.033	0.032	0.032	0.031
26.0	**0.027**	0.032	0.032	0.031	0.031	0.030	0.030	0.029	0.029	0.029	0.028	0.028	0.027	0.027
26.5	**0.023**	0.028	0.027	0.027	0.026	0.026	0.025	0.025	0.025	0.024	0.024	0.024	0.023	0.023
27.0	**0.020**	0.023	0.023	0.023	0.022	0.022	0.022	0.021	0.021	0.021	0.020	0.020	0.020	0.020
27.5	**0.017**	0.020	0.019	0.019	0.019	0.018	0.018	0.018	0.018	0.017	0.017	0.017	0.017	0.017
28.0	**0.014**	0.017	0.016	0.016	0.016	0.016	0.015	0.015	0.015	0.015	0.015	0.015	0.014	0.014
28.5	**0.013**	0.015	0.014	0.014	0.014	0.014	0.014	0.013	0.013	0.013	0.013	0.013	0.012	0.012
29.0	**0.012**	0.014	0.014	0.013	0.013	0.013	0.013	0.013	0.012	0.012	0.012	0.012	0.012	0.012
29.5	**0.011**	0.013	0.013	0.013	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.011	0.011
30.0	**0.011**	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.011	0.011	0.011	0.011	0.011

Table 6-5: C_t values, Mode 0/0-0S (High Wind Operation)

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Original Instruction: T05 0053-3711 VER 06

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6.6 Sound Curves, Mode 0/0-0S (HWO)

Sound Power Level at Hub Height		
Conditions for Sound Power Level:	**Measurement standard IEC 61400-11 ed. 3 Maximum turbulence at hub height: 30% Inflow angle (vertical): 0 ±2° Air density: 1.225 kg/m^3**	
Wind speed at hub height [m/s]	**Sound Power Level at Hub Height [dBA] Mode 0 (Blades with serrated trailing edge)**	**Sound Power Level at Hub Height [dBA] Mode 0-0S (Blades without serrated trailing edge)**
3	91.8	93.3
4	92.1	93.7
5	93.9	96.0
6	97.1	99.6
7	100.4	103.0
8	103.4	106.1
9	106.0	108.6
10	106.8	109.3
11	106.8	109.3
12	106.8	109.3
13	106.8	109.3
14	106.8	109.3
15	106.8	109.3
16	106.8	109.3
17	106.8	109.3
18	106.8	109.3
19	106.8	109.3
20	106.8	109.3

Table 6-6: Sound curves, Mode 0/0-0S (High Wind Operation)

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Original Instruction: T05 0053-3711 VER 06

7 Power Curves, Ct Values and Sound Curves for Sound Optimized (SO) Modes

7.1 Power Curves, Sound Optimized Mode SO1

Air density [kg/m³]														
Wind speed [m/s]	**1.225**	**0.95**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**22**	10	11	12	13	13	15	16	17	18	19	21	23	24
3.5	**78**	49	52	54	57	60	62	65	67	70	73	75	81	83
4.0	**150**	105	110	114	118	122	126	130	134	138	142	146	154	158
4.5	**236**	172	178	184	190	196	201	207	213	219	225	231	242	248
5.0	**340**	252	260	268	276	284	292	300	308	316	324	332	348	356
5.5	**465**	349	360	370	381	392	402	413	423	434	444	455	476	487
6.0	**617**	466	480	494	508	521	535	549	562	576	590	603	631	644
6.5	**796**	605	622	640	657	675	692	709	727	744	762	779	813	831
7.0	**1005**	767	789	811	832	854	876	898	919	941	962	984	1027	1048
7.5	**1247**	955	982	1008	1035	1062	1088	1115	1141	1168	1194	1221	1274	1300
8.0	**1525**	1170	1203	1235	1267	1300	1332	1364	1396	1428	1461	1493	1556	1588
8.5	**1832**	1412	1450	1489	1528	1566	1605	1643	1681	1719	1757	1795	1870	1908
9.0	**2169**	1679	1724	1769	1814	1859	1904	1948	1993	2037	2081	2125	2213	2256
9.5	**2520**	1965	2017	2068	2120	2172	2223	2273	2324	2375	2423	2471	2565	2611
10.0	**2840**	2268	2325	2383	2440	2498	2550	2602	2655	2707	2751	2796	2877	2913
10.5	**3068**	2574	2631	2688	2745	2802	2846	2889	2933	2976	3007	3037	3090	3112
11.0	**3204**	2843	2890	2938	2985	3033	3063	3093	3123	3153	3170	3187	3214	3224
11.5	**3277**	3070	3103	3135	3167	3199	3214	3229	3244	3259	3265	3271	3280	3283
12.0	**3322**	3227	3244	3261	3278	3295	3300	3306	3311	3316	3318	3320	3323	3323
12.5	**3355**	3319	3326	3332	3339	3346	3348	3350	3352	3354	3354	3354	3355	3356
13.0	**3378**	3365	3368	3370	3373	3376	3376	3377	3377	3378	3378	3378	3378	3378
13.5	**3390**	3383	3385	3386	3388	3390	3390	3390	3390	3390	3390	3390	3390	3390
14.0	**3406**	3404	3404	3405	3406	3406	3406	3406	3406	3406	3406	3406	3406	3406
14.5	**3421**	3421	3422	3422	3422	3422	3422	3422	3422	3422	3421	3421	3421	3420
15.0	**3433**	3434	3434	3434	3434	3434	3434	3434	3434	3434	3434	3434	3433	3433
15.5	**3442**	3443	3443	3443	3443	3443	3443	3443	3443	3443	3443	3443	3442	3442
16.0	**3448**	3448	3448	3448	3448	3448	3448	3448	3448	3448	3448	3448	3447	3447
16.5	**3449**	3450	3450	3450	3450	3450	3450	3450	3449	3449	3449	3449	3449	3449
17.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
17.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
18.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
18.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
19.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
19.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
20.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
20.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
21.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
21.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
22.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
22.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
23.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
23.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
24.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
24.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
25.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450

Table 7-1: Power curve, Sound Optimized Mode SO1

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7.2 Ct Values, Sound Optimized Mode SO1

Air density kg/m³														
Wind speed [m/s]	**1.225**	**0.950**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**0.873**	0.878	0.878	0.877	0.877	0.877	0.876	0.876	0.875	0.875	0.874	0.874	0.873	0.873
3.5	**0.849**	0.853	0.853	0.852	0.852	0.851	0.851	0.851	0.850	0.850	0.850	0.849	0.849	0.848
4.0	**0.827**	0.831	0.831	0.831	0.830	0.830	0.829	0.829	0.829	0.828	0.828	0.827	0.826	0.826
4.5	**0.816**	0.815	0.815	0.815	0.815	0.814	0.814	0.815	0.815	0.815	0.815	0.815	0.816	0.816
5.0	**0.826**	0.825	0.825	0.825	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.825	0.825
5.5	**0.825**	0.829	0.828	0.828	0.828	0.828	0.827	0.827	0.826	0.826	0.826	0.825	0.824	0.824
6.0	**0.819**	0.825	0.824	0.824	0.823	0.823	0.822	0.822	0.821	0.821	0.820	0.820	0.819	0.818
6.5	**0.815**	0.821	0.820	0.820	0.819	0.819	0.818	0.818	0.817	0.816	0.816	0.815	0.814	0.813
7.0	**0.808**	0.815	0.815	0.814	0.814	0.813	0.812	0.812	0.811	0.810	0.809	0.809	0.807	0.806
7.5	**0.804**	0.813	0.813	0.812	0.811	0.810	0.809	0.808	0.807	0.806	0.805	0.805	0.803	0.802
8.0	**0.798**	0.809	0.808	0.807	0.806	0.805	0.804	0.803	0.802	0.801	0.800	0.799	0.797	0.795
8.5	**0.786**	0.798	0.797	0.796	0.795	0.794	0.793	0.792	0.790	0.789	0.788	0.787	0.784	0.783
9.0	**0.773**	0.787	0.785	0.784	0.783	0.782	0.781	0.779	0.778	0.777	0.775	0.774	0.771	0.769
9.5	**0.750**	0.771	0.770	0.769	0.767	0.766	0.764	0.762	0.761	0.759	0.756	0.753	0.746	0.743
10.0	**0.703**	0.748	0.746	0.744	0.742	0.739	0.735	0.731	0.727	0.723	0.716	0.710	0.694	0.685
10.5	**0.625**	0.714	0.709	0.704	0.699	0.694	0.685	0.676	0.667	0.658	0.647	0.636	0.613	0.601
11.0	**0.541**	0.662	0.653	0.644	0.635	0.627	0.615	0.603	0.591	0.579	0.567	0.554	0.528	0.515
11.5	**0.463**	0.605	0.592	0.580	0.567	0.555	0.541	0.528	0.514	0.501	0.488	0.476	0.452	0.441
12.0	**0.400**	0.539	0.525	0.511	0.497	0.483	0.470	0.458	0.445	0.432	0.422	0.411	0.391	0.382
12.5	**0.350**	0.473	0.460	0.446	0.433	0.420	0.409	0.398	0.387	0.376	0.368	0.359	0.342	0.335
13.0	**0.308**	0.413	0.402	0.390	0.379	0.367	0.358	0.349	0.340	0.331	0.323	0.316	0.302	0.295
13.5	**0.275**	0.364	0.354	0.345	0.335	0.325	0.317	0.310	0.302	0.294	0.288	0.281	0.269	0.263
14.0	**0.245**	0.323	0.314	0.306	0.297	0.289	0.282	0.275	0.269	0.262	0.257	0.251	0.241	0.236
14.5	**0.221**	0.288	0.281	0.273	0.266	0.259	0.253	0.247	0.241	0.235	0.230	0.226	0.216	0.212
15.0	**0.198**	0.257	0.251	0.244	0.238	0.232	0.226	0.221	0.216	0.211	0.207	0.203	0.195	0.191
15.5	**0.180**	0.232	0.226	0.221	0.215	0.209	0.205	0.200	0.196	0.191	0.187	0.184	0.176	0.173
16.0	**0.164**	0.210	0.205	0.200	0.195	0.190	0.186	0.182	0.178	0.174	0.170	0.167	0.160	0.157
16.5	**0.149**	0.191	0.186	0.182	0.177	0.173	0.169	0.166	0.162	0.158	0.155	0.152	0.146	0.144
17.0	**0.137**	0.174	0.170	0.166	0.162	0.158	0.155	0.151	0.148	0.145	0.142	0.139	0.134	0.132
17.5	**0.125**	0.159	0.156	0.152	0.148	0.145	0.142	0.139	0.136	0.133	0.130	0.128	0.123	0.121
18.0	**0.115**	0.146	0.143	0.140	0.136	0.133	0.130	0.128	0.125	0.122	0.120	0.118	0.113	0.111
18.5	**0.107**	0.135	0.132	0.129	0.126	0.123	0.120	0.118	0.115	0.113	0.111	0.109	0.105	0.103
19.0	**0.098**	0.124	0.121	0.118	0.116	0.113	0.111	0.108	0.106	0.104	0.102	0.100	0.097	0.095
19.5	**0.091**	0.115	0.112	0.110	0.107	0.105	0.103	0.101	0.098	0.096	0.095	0.093	0.090	0.088
20.0	**0.085**	0.106	0.104	0.102	0.100	0.097	0.095	0.094	0.092	0.090	0.088	0.087	0.084	0.082
20.5	**0.079**	0.099	0.097	0.095	0.093	0.091	0.089	0.087	0.085	0.084	0.082	0.081	0.078	0.077
21.0	**0.074**	0.093	0.091	0.089	0.087	0.085	0.083	0.081	0.080	0.078	0.077	0.076	0.073	0.072
21.5	**0.070**	0.087	0.085	0.084	0.082	0.080	0.078	0.077	0.075	0.074	0.073	0.071	0.069	0.068
22.0	**0.066**	0.082	0.080	0.078	0.077	0.075	0.074	0.072	0.071	0.069	0.068	0.067	0.065	0.064
22.5	**0.062**	0.077	0.075	0.074	0.072	0.070	0.069	0.068	0.067	0.065	0.064	0.063	0.061	0.060
23.0	**0.058**	0.072	0.070	0.069	0.067	0.066	0.065	0.063	0.062	0.061	0.060	0.059	0.057	0.056
23.5	**0.055**	0.068	0.066	0.065	0.063	0.062	0.061	0.06	0.059	0.058	0.057	0.056	0.054	0.053
24.0	**0.052**	0.064	0.062	0.061	0.060	0.059	0.058	0.057	0.055	0.054	0.054	0.053	0.051	0.050
24.5	**0.049**	0.060	0.059	0.058	0.057	0.055	0.054	0.053	0.052	0.052	0.051	0.050	0.048	0.048
25.0	**0.046**	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.050	0.049	0.048	0.047	0.046	0.045

Table 7-2: C_t values, Sound Optimized Mode SO1

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Original Instruction: T05 0053-3711 VER 06

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7.3 Sound Curves, Sound Optimized Mode SO1

Sound Power Level at Hub Height	
Conditions for Sound Power Level:	**Measurement standard IEC 61400-11 ed. 3** **Maximum turbulence at hub height: 30%** **Inflow angle (vertical): 0 ±2°** **Air density: 1.225 kg/m^3**
Wind speed at hub height [m/s]	**Sound Power Level at Hub Height [dBA]** **Sound Optimized Mode SO1** **(Blades with serrated trailing edge)**
3	91.8
4	92.1
5	93.9
6	97.1
7	100.4
8	103.2
9	104.8
10	105.2
11	105.2
12	105.2
13	105.2
14	105.2
15	105.2
16	105.2
17	105.2
18	105.2
19	105.2
20	105.2

Table 7-3: Sound curves, Sound Optimized Mode SO1

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Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.4 Power Curves, Sound Optimized Mode SO1 (HWO)

Air density [kg/m³]														
Wind speed [m/s]	**1.225**	**0.95**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**22**	10	11	12	13	13	15	16	17	18	19	21	23	24
3.5	**78**	49	52	54	57	60	62	65	67	70	73	75	81	83
4.0	**150**	105	110	114	118	122	126	130	134	138	142	146	154	158
4.5	**236**	172	178	184	190	196	201	207	213	219	225	231	242	248
5.0	**340**	252	260	268	276	284	292	300	308	316	324	332	348	356
5.5	**465**	349	360	370	381	392	402	413	423	434	444	455	476	487
6.0	**617**	466	480	494	508	521	535	549	562	576	590	603	631	644
6.5	**796**	605	622	640	657	675	692	709	727	744	762	779	813	831
7.0	**1005**	767	789	811	832	854	876	898	919	941	962	984	1027	1049
7.5	**1247**	955	982	1008	1035	1062	1088	1115	1141	1168	1194	1221	1274	1300
8.0	**1525**	1171	1203	1235	1268	1300	1332	1364	1396	1429	1461	1493	1556	1588
8.5	**1833**	1412	1450	1489	1528	1566	1605	1643	1681	1719	1757	1795	1870	1908
9.0	**2169**	1679	1724	1769	1814	1859	1904	1948	1993	2037	2081	2125	2213	2256
9.5	**2520**	1965	2017	2068	2120	2172	2223	2273	2324	2375	2423	2471	2565	2611
10.0	**2840**	2268	2325	2383	2440	2498	2550	2602	2655	2707	2751	2796	2877	2913
10.5	**3068**	2574	2631	2688	2745	2803	2846	2889	2933	2976	3007	3037	3090	3112
11.0	**3204**	2843	2890	2938	2985	3033	3063	3093	3123	3153	3170	3187	3214	3224
11.5	**3277**	3070	3103	3135	3167	3199	3214	3229	3244	3259	3265	3271	3280	3283
12.0	**3322**	3227	3244	3261	3278	3295	3300	3306	3311	3317	3318	3320	3323	3323
12.5	**3355**	3319	3326	3332	3339	3346	3348	3350	3352	3354	3354	3355	3355	3356
13.0	**3378**	3365	3368	3370	3373	3376	3376	3377	3377	3378	3378	3378	3378	3378
13.5	**3390**	3383	3385	3387	3388	3390	3390	3390	3390	3391	3390	3390	3390	3390
14.0	**3406**	3404	3404	3405	3406	3407	3406	3406	3406	3406	3406	3406	3406	3406
14.5	**3421**	3421	3422	3422	3422	3422	3422	3422	3422	3422	3421	3421	3421	3420
15.0	**3433**	3434	3434	3434	3434	3435	3434	3434	3434	3434	3434	3434	3433	3433
15.5	**3442**	3443	3443	3443	3443	3443	3443	3443	3443	3443	3443	3443	3442	3442
16.0	**3448**	3448	3448	3448	3448	3448	3448	3448	3448	3448	3448	3448	3447	3447
16.5	**3449**	3450	3450	3450	3450	3450	3450	3450	3449	3449	3449	3449	3449	3449
17.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
17.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
18.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
18.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
19.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
19.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
20.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
20.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
21.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
21.5	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
22.0	**3450**	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
22.5	**3449**	3445	3446	3446	3447	3447	3447	3448	3448	3448	3449	3449	3449	3449
23.0	**3422**	3386	3390	3393	3397	3400	3403	3407	3410	3413	3416	3419	3424	3427
23.5	**3328**	3256	3263	3270	3276	3283	3290	3296	3302	3309	3315	3321	3333	3339
24.0	**3158**	3061	3070	3079	3088	3097	3105	3114	3123	3132	3141	3149	3167	3176
24.5	**2931**	2827	2836	2845	2854	2864	2873	2882	2891	2900	2911	2921	2940	2950
25.0	**2676**	2585	2593	2601	2609	2618	2625	2633	2641	2649	2658	2667	2685	2694
25.5	**2430**	2347	2354	2362	2369	2376	2384	2391	2399	2406	2414	2422	2437	2445
26.0	**2171**	2101	2106	2112	2117	2123	2131	2138	2146	2154	2159	2165	2178	2186
26.5	**1918**	1856	1862	1868	1874	1880	1885	1890	1894	1899	1906	1912	1923	1929
27.0	**1664**	1614	1619	1624	1628	1633	1638	1642	1646	1650	1655	1659	1669	1674
27.5	**1427**	1379	1383	1387	1391	1396	1399	1403	1407	1411	1417	1422	1430	1434
28.0	**1224**	1191	1195	1199	1203	1207	1209	1211	1214	1216	1219	1221	1228	1232
28.5	**1090**	1077	1078	1079	1080	1081	1082	1084	1085	1086	1087	1088	1091	1093
29.0	**1046**	1043	1043	1043	1044	1044	1044	1044	1044	1045	1045	1045	1046	1047
29.5	**1036**	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1037
30.0	**1035**	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035

Table 7-4: Power curve, Sound Optimized Mode SO1 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.5 Ct Values, Sound Optimized Mode SO1 (HWO)

Air density kg/m³														
Wind speed [m/s]	**1.225**	**0.950**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**0.873**	0.878	0.878	0.877	0.877	0.877	0.876	0.876	0.875	0.875	0.874	0.874	0.873	0.873
3.5	**0.849**	0.853	0.853	0.852	0.852	0.851	0.851	0.851	0.850	0.850	0.850	0.849	0.849	0.848
4.0	**0.827**	0.831	0.831	0.831	0.830	0.830	0.829	0.829	0.829	0.828	0.828	0.827	0.826	0.826
4.5	**0.816**	0.815	0.815	0.815	0.815	0.814	0.814	0.815	0.815	0.815	0.815	0.815	0.816	0.816
5.0	**0.826**	0.825	0.825	0.825	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.825	0.825
5.5	**0.825**	0.829	0.828	0.828	0.828	0.828	0.827	0.827	0.826	0.826	0.826	0.825	0.824	0.824
6.0	**0.819**	0.825	0.824	0.824	0.823	0.823	0.822	0.822	0.821	0.821	0.820	0.820	0.819	0.818
6.5	**0.815**	0.821	0.820	0.820	0.819	0.819	0.818	0.818	0.817	0.816	0.816	0.815	0.814	0.813
7.0	**0.808**	0.815	0.815	0.814	0.814	0.813	0.812	0.812	0.811	0.810	0.809	0.809	0.807	0.806
7.5	**0.804**	0.813	0.813	0.812	0.811	0.810	0.809	0.808	0.807	0.806	0.805	0.805	0.803	0.802
8.0	**0.798**	0.809	0.808	0.807	0.806	0.805	0.804	0.803	0.802	0.801	0.800	0.799	0.797	0.795
8.5	**0.786**	0.798	0.797	0.796	0.795	0.794	0.793	0.792	0.790	0.789	0.788	0.787	0.784	0.783
9.0	**0.773**	0.787	0.785	0.784	0.783	0.782	0.781	0.779	0.778	0.777	0.775	0.774	0.771	0.769
9.5	**0.750**	0.771	0.770	0.769	0.767	0.766	0.764	0.762	0.761	0.759	0.756	0.753	0.746	0.743
10.0	**0.703**	0.748	0.746	0.744	0.742	0.739	0.735	0.731	0.727	0.723	0.716	0.710	0.694	0.685
10.5	**0.625**	0.714	0.709	0.704	0.699	0.694	0.685	0.676	0.667	0.658	0.647	0.636	0.613	0.601
11.0	**0.541**	0.662	0.653	0.644	0.635	0.627	0.615	0.603	0.591	0.579	0.567	0.554	0.528	0.515
11.5	**0.463**	0.605	0.592	0.580	0.567	0.555	0.541	0.528	0.514	0.501	0.488	0.476	0.452	0.441
12.0	**0.400**	0.539	0.525	0.511	0.497	0.483	0.470	0.458	0.445	0.432	0.422	0.411	0.391	0.382
12.5	**0.350**	0.473	0.460	0.446	0.433	0.420	0.409	0.398	0.387	0.376	0.368	0.359	0.342	0.335
13.0	**0.308**	0.413	0.402	0.390	0.379	0.367	0.358	0.349	0.340	0.331	0.323	0.316	0.302	0.295
13.5	**0.275**	0.364	0.354	0.345	0.335	0.325	0.317	0.310	0.302	0.294	0.288	0.281	0.269	0.263
14.0	**0.245**	0.323	0.314	0.306	0.297	0.289	0.282	0.275	0.269	0.262	0.257	0.251	0.241	0.236
14.5	**0.221**	0.288	0.281	0.273	0.266	0.259	0.253	0.247	0.241	0.235	0.230	0.226	0.216	0.212
15.0	**0.198**	0.257	0.251	0.244	0.238	0.232	0.226	0.221	0.216	0.211	0.207	0.203	0.195	0.191
15.5	**0.180**	0.232	0.226	0.221	0.215	0.209	0.205	0.200	0.196	0.191	0.187	0.184	0.176	0.173
16.0	**0.164**	0.210	0.205	0.200	0.195	0.190	0.186	0.182	0.178	0.174	0.170	0.167	0.160	0.157
16.5	**0.149**	0.191	0.186	0.182	0.177	0.173	0.169	0.166	0.162	0.158	0.155	0.152	0.146	0.144
17.0	**0.137**	0.174	0.170	0.166	0.162	0.158	0.155	0.151	0.148	0.145	0.142	0.139	0.134	0.132
17.5	**0.125**	0.159	0.156	0.152	0.148	0.145	0.142	0.139	0.136	0.133	0.130	0.128	0.123	0.121
18.0	**0.115**	0.146	0.143	0.140	0.136	0.133	0.130	0.128	0.125	0.122	0.120	0.118	0.113	0.111
18.5	**0.107**	0.135	0.132	0.129	0.126	0.123	0.120	0.118	0.115	0.113	0.111	0.109	0.105	0.103
19.0	**0.098**	0.124	0.121	0.118	0.116	0.113	0.111	0.108	0.106	0.104	0.102	0.100	0.097	0.095
19.5	**0.091**	0.115	0.112	0.110	0.107	0.105	0.103	0.101	0.098	0.096	0.095	0.093	0.090	0.088
20.0	**0.085**	0.106	0.104	0.102	0.100	0.097	0.095	0.094	0.092	0.090	0.088	0.087	0.084	0.082
20.5	**0.079**	0.099	0.097	0.095	0.093	0.091	0.089	0.087	0.085	0.084	0.082	0.081	0.078	0.077
21.0	**0.074**	0.093	0.091	0.089	0.087	0.085	0.083	0.081	0.080	0.078	0.077	0.076	0.073	0.072
21.5	**0.070**	0.087	0.085	0.084	0.082	0.080	0.078	0.077	0.075	0.074	0.073	0.071	0.069	0.068
22.0	**0.066**	0.082	0.080	0.078	0.077	0.075	0.074	0.072	0.071	0.069	0.068	0.067	0.065	0.064
22.5	**0.062**	0.077	0.075	0.073	0.072	0.070	0.069	0.068	0.066	0.065	0.064	0.063	0.061	0.060
23.0	**0.058**	0.070	0.069	0.068	0.066	0.065	0.064	0.063	0.062	0.060	0.060	0.059	0.057	0.056
23.5	**0.053**	0.064	0.063	0.062	0.060	0.059	0.058	0.057	0.056	0.055	0.055	0.054	0.052	0.051
24.0	**0.048**	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.051	0.050	0.049	0.048	0.047	0.046
24.5	**0.042**	0.050	0.049	0.048	0.047	0.047	0.046	0.045	0.044	0.044	0.043	0.043	0.042	0.041
25.0	**0.037**	0.043	0.043	0.042	0.041	0.040	0.040	0.039	0.039	0.038	0.038	0.037	0.036	0.036
25.5	**0.032**	0.038	0.037	0.037	0.036	0.035	0.035	0.034	0.034	0.033	0.033	0.032	0.032	0.031
26.0	**0.027**	0.032	0.032	0.031	0.031	0.030	0.030	0.029	0.029	0.029	0.028	0.028	0.027	0.027
26.5	**0.023**	0.028	0.027	0.027	0.026	0.026	0.025	0.025	0.025	0.024	0.024	0.024	0.023	0.023
27.0	**0.020**	0.023	0.023	0.023	0.022	0.022	0.022	0.021	0.021	0.021	0.020	0.020	0.020	0.020
27.5	**0.017**	0.020	0.019	0.019	0.019	0.018	0.018	0.018	0.018	0.017	0.017	0.017	0.017	0.017
28.0	**0.014**	0.017	0.016	0.016	0.016	0.016	0.015	0.015	0.015	0.015	0.015	0.015	0.014	0.014
28.5	**0.013**	0.015	0.014	0.014	0.014	0.014	0.014	0.013	0.013	0.013	0.013	0.013	0.012	0.012
29.0	**0.012**	0.014	0.014	0.013	0.013	0.013	0.013	0.013	0.012	0.012	0.012	0.012	0.012	0.012
29.5	**0.011**	0.013	0.013	0.013	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.011	0.011
30.0	**0.011**	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.011	0.011	0.011	0.011	0.011

Table 7-5: C_t values, Sound Optimized Mode SO1 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.6 Sound Curves, Sound Optimized Mode SO1 (HWO)

Sound Power Level at Hub Height	
Conditions for Sound Power Level:	**Measurement standard IEC 61400-11 ed. 3** **Maximum turbulence at hub height: 30%** **Inflow angle (vertical): 0 ±2°** **Air density: 1.225 kg/m^3**
Wind speed at hub height [m/s]	**Sound Power Level at Hub Height [dBA]** **Sound Optimized Mode SO1** **(Blades with serrated trailing edge)**
3	91.8
4	92.1
5	93.9
6	97.1
7	100.4
8	103.2
9	104.8
10	105.2
11	105.2
12	105.2
13	105.2
14	105.2
15	105.2
16	105.2
17	105.2
18	105.2
19	105.2
20	105.2

Table 7-6: Sound curves, Sound Optimized Mode SO1 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.7 Power Curves, Sound Optimized Mode SO2

Air density [kg/m³]														
Wind speed [m/s]	**1.225**	**0.95**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**22**	10	11	12	13	13	15	16	17	18	19	21	23	24
3.5	**78**	49	52	54	57	60	62	65	67	70	73	75	81	83
4.0	**150**	105	110	114	118	122	126	130	134	138	142	146	154	158
4.5	**236**	172	178	184	190	196	201	207	213	219	225	231	242	248
5.0	**340**	252	260	268	276	284	292	300	308	316	324	332	348	356
5.5	**465**	349	360	370	381	392	402	413	423	434	444	455	476	487
6.0	**617**	466	480	494	508	521	535	549	562	576	590	603	631	644
6.5	**796**	605	622	640	657	675	692	709	727	744	762	779	813	831
7.0	**1005**	767	789	811	832	854	876	898	919	941	962	984	1027	1048
7.5	**1248**	955	982	1008	1035	1062	1088	1115	1142	1168	1195	1221	1274	1300
8.0	**1526**	1170	1203	1235	1268	1300	1332	1365	1397	1429	1461	1494	1557	1589
8.5	**1830**	1409	1448	1486	1525	1563	1601	1640	1678	1716	1754	1792	1868	1905
9.0	**2150**	1664	1709	1754	1798	1843	1887	1932	1976	2020	2064	2107	2194	2236
9.5	**2459**	1923	1974	2024	2075	2125	2174	2223	2272	2321	2367	2413	2502	2545
10.0	**2712**	2164	2219	2274	2329	2384	2435	2485	2536	2586	2628	2670	2746	2780
10.5	**2878**	2382	2438	2494	2549	2606	2650	2695	2740	2785	2816	2847	2900	2923
11.0	**2982**	2581	2630	2680	2729	2778	2813	2848	2882	2917	2939	2960	2996	3009
11.5	**3058**	2781	2820	2859	2898	2936	2958	2980	3002	3024	3036	3047	3064	3071
12.0	**3109**	2957	2982	3006	3030	3055	3065	3076	3087	3097	3101	3105	3111	3113
12.5	**3139**	3073	3085	3097	3109	3121	3125	3128	3132	3136	3137	3138	3139	3140
13.0	**3160**	3136	3141	3146	3150	3154	3156	3157	3158	3159	3159	3159	3160	3160
13.5	**3178**	3165	3167	3170	3173	3176	3177	3177	3178	3179	3179	3179	3178	3178
14.0	**3197**	3193	3194	3195	3196	3197	3197	3197	3197	3197	3197	3197	3197	3196
14.5	**3214**	3214	3215	3215	3215	3215	3215	3215	3215	3215	3215	3214	3214	3214
15.0	**3229**	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3229	3229
15.5	**3242**	3243	3243	3243	3243	3243	3242	3242	3242	3242	3242	3242	3241	3241
16.0	**3250**	3252	3252	3252	3252	3252	3252	3252	3251	3251	3251	3251	3250	3250
16.5	**3260**	3262	3262	3262	3262	3262	3261	3261	3261	3260	3260	3260	3259	3259
17.0	**3271**	3275	3274	3274	3274	3274	3273	3273	3273	3272	3272	3272	3271	3270
17.5	**3284**	3287	3287	3287	3286	3286	3286	3285	3285	3284	3284	3284	3283	3283
18.0	**3294**	3296	3296	3296	3295	3295	3295	3295	3295	3294	3294	3294	3294	3293
18.5	**3299**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3299	3299	3299
19.0	**3301**	3301	3301	3301	3301	3301	3301	3301	3301	3301	3301	3301	3301	3301
19.5	**3302**	3303	3303	3303	3302	3302	3302	3302	3302	3302	3302	3302	3301	3301
20.0	**3306**	3308	3308	3308	3308	3307	3307	3307	3306	3306	3306	3306	3306	3305
20.5	**3312**	3316	3316	3315	3315	3315	3314	3314	3314	3313	3313	3313	3312	3312
21.0	**3320**	3324	3323	3323	3322	3322	3322	3322	3321	3321	3321	3321	3320	3320
21.5	**3329**	3334	3333	3333	3332	3332	3331	3331	3330	3330	3330	3329	3328	3328
22.0	**3340**	3345	3345	3344	3344	3343	3343	3342	3342	3342	3341	3341	3340	3339
22.5	**3351**	3356	3355	3355	3354	3354	3354	3353	3353	3353	3352	3352	3351	3350
23.0	**3356**	3358	3358	3358	3358	3358	3358	3357	3357	3357	3357	3357	3356	3356
23.5	**3360**	3360	3360	3360	3360	3360	3360	3360	3360	3360	3360	3360	3360	3360
24.0	**3360**	3360	3360	3360	3360	3360	3360	3360	3360	3360	3360	3360	3360	3360
24.5	**3359**	3358	3359	3359	3359	3359	3359	3359	3359	3359	3359	3359	3359	3360
25.0	**3357**	3356	3356	3356	3356	3356	3356	3356	3357	3357	3357	3357	3357	3357

Table 7-7: Power curve, Sound Optimized Mode SO2

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.8 Ct Values, Sound Optimized Mode SO2

Air density kg/m³														
Wind speed [m/s]	**1.225**	**0.950**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**0.873**	0.878	0.878	0.877	0.877	0.877	0.876	0.876	0.875	0.875	0.874	0.874	0.873	0.873
3.5	**0.849**	0.853	0.853	0.852	0.852	0.851	0.851	0.851	0.850	0.850	0.850	0.849	0.849	0.848
4.0	**0.827**	0.831	0.831	0.831	0.830	0.830	0.829	0.829	0.829	0.828	0.828	0.827	0.826	0.826
4.5	**0.816**	0.815	0.815	0.815	0.815	0.814	0.814	0.815	0.815	0.815	0.815	0.815	0.816	0.816
5.0	**0.826**	0.825	0.825	0.825	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.825	0.825
5.5	**0.825**	0.829	0.828	0.828	0.828	0.828	0.827	0.827	0.826	0.826	0.826	0.825	0.824	0.824
6.0	**0.819**	0.825	0.824	0.824	0.823	0.823	0.822	0.822	0.821	0.821	0.820	0.820	0.819	0.818
6.5	**0.815**	0.821	0.820	0.820	0.819	0.819	0.818	0.818	0.817	0.816	0.816	0.815	0.814	0.813
7.0	**0.808**	0.815	0.815	0.814	0.814	0.813	0.812	0.812	0.811	0.810	0.809	0.809	0.807	0.806
7.5	**0.805**	0.815	0.814	0.813	0.812	0.811	0.810	0.809	0.808	0.807	0.807	0.806	0.804	0.803
8.0	**0.803**	0.814	0.813	0.812	0.811	0.810	0.809	0.808	0.807	0.806	0.805	0.804	0.802	0.800
8.5	**0.791**	0.803	0.802	0.801	0.800	0.799	0.798	0.796	0.795	0.794	0.793	0.792	0.790	0.788
9.0	**0.763**	0.775	0.774	0.773	0.772	0.771	0.770	0.769	0.768	0.767	0.766	0.765	0.762	0.760
9.5	**0.715**	0.733	0.732	0.731	0.730	0.729	0.728	0.726	0.725	0.723	0.720	0.718	0.711	0.707
10.0	**0.644**	0.675	0.674	0.673	0.672	0.671	0.668	0.666	0.663	0.660	0.655	0.650	0.637	0.629
10.5	**0.560**	0.613	0.611	0.609	0.606	0.604	0.599	0.594	0.589	0.584	0.576	0.568	0.551	0.542
11.0	**0.484**	0.556	0.551	0.547	0.542	0.537	0.530	0.523	0.516	0.509	0.501	0.492	0.474	0.465
11.5	**0.421**	0.512	0.505	0.498	0.490	0.483	0.475	0.466	0.457	0.448	0.439	0.430	0.412	0.403
12.0	**0.368**	0.471	0.462	0.452	0.443	0.433	0.424	0.414	0.404	0.394	0.386	0.377	0.360	0.352
12.5	**0.323**	0.425	0.414	0.404	0.394	0.383	0.374	0.365	0.355	0.346	0.338	0.330	0.316	0.309
13.0	**0.285**	0.377	0.367	0.357	0.348	0.338	0.329	0.321	0.313	0.305	0.298	0.291	0.279	0.273
13.5	**0.255**	0.335	0.327	0.318	0.309	0.301	0.294	0.286	0.279	0.272	0.266	0.261	0.249	0.244
14.0	**0.228**	0.299	0.291	0.284	0.276	0.268	0.262	0.256	0.250	0.243	0.238	0.233	0.223	0.219
14.5	**0.205**	0.268	0.261	0.254	0.248	0.241	0.235	0.230	0.224	0.219	0.215	0.210	0.201	0.197
15.0	**0.185**	0.240	0.234	0.228	0.222	0.216	0.211	0.207	0.202	0.197	0.193	0.189	0.181	0.178
15.5	**0.168**	0.217	0.212	0.206	0.201	0.196	0.192	0.187	0.183	0.179	0.175	0.172	0.165	0.162
16.0	**0.153**	0.197	0.192	0.187	0.183	0.178	0.174	0.170	0.167	0.163	0.159	0.156	0.150	0.147
16.5	**0.140**	0.179	0.175	0.171	0.167	0.162	0.159	0.156	0.152	0.149	0.146	0.143	0.137	0.135
17.0	**0.129**	0.164	0.160	0.157	0.153	0.149	0.146	0.143	0.140	0.137	0.134	0.131	0.126	0.124
17.5	**0.119**	0.151	0.148	0.144	0.141	0.137	0.134	0.131	0.129	0.126	0.123	0.121	0.117	0.114
18.0	**0.110**	0.139	0.136	0.133	0.130	0.126	0.124	0.121	0.119	0.116	0.114	0.112	0.108	0.106
18.5	**0.102**	0.128	0.126	0.123	0.120	0.117	0.115	0.112	0.110	0.107	0.106	0.104	0.100	0.098
19.0	**0.094**	0.118	0.115	0.113	0.110	0.108	0.105	0.103	0.101	0.099	0.097	0.095	0.092	0.090
19.5	**0.087**	0.109	0.107	0.105	0.102	0.100	0.098	0.096	0.094	0.092	0.090	0.089	0.085	0.084
20.0	**0.081**	0.102	0.100	0.097	0.095	0.093	0.091	0.089	0.087	0.086	0.084	0.083	0.080	0.078
20.5	**0.076**	0.095	0.093	0.091	0.089	0.087	0.085	0.083	0.082	0.080	0.079	0.077	0.075	0.073
21.0	**0.071**	0.089	0.087	0.085	0.083	0.081	0.080	0.078	0.077	0.075	0.074	0.072	0.070	0.069
21.5	**0.067**	0.084	0.082	0.081	0.079	0.077	0.076	0.074	0.073	0.071	0.070	0.069	0.066	0.065
22.0	**0.064**	0.079	0.077	0.076	0.074	0.072	0.071	0.070	0.068	0.067	0.066	0.065	0.063	0.061
22.5	**0.060**	0.075	0.073	0.071	0.070	0.068	0.067	0.066	0.064	0.063	0.062	0.061	0.059	0.058
23.0	**0.056**	0.070	0.068	0.067	0.065	0.064	0.063	0.062	0.060	0.059	0.058	0.057	0.055	0.055
23.5	**0.053**	0.066	0.064	0.063	0.062	0.06	0.059	0.058	0.057	0.056	0.055	0.054	0.052	0.052
24.0	**0.050**	0.062	0.061	0.060	0.058	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.050	0.049
24.5	**0.048**	0.059	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.050	0.049	0.048	0.047	0.046
25.0	**0.045**	0.055	0.054	0.053	0.052	0.051	0.050	0.049	0.048	0.047	0.047	0.046	0.044	0.044

Table 7-8: C_t values, Sound Optimized Mode SO2

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.9 Sound Curves, Sound Optimized Mode SO2

Sound Power Level at Hub Height	
Conditions for Sound Power Level:	**Measurement standard IEC 61400-11 ed. 3** **Maximum turbulence at hub height: 30%** **Inflow angle (vertical): 0 ±2°** **Air density: 1.225 kg/m^3**
Wind speed at hub height [m/s]	**Sound Power Level at Hub Height [dBA]** **Sound Optimized Mode SO2** (not available for hub height 116.5 m in IEC IB climate) **(Blades with serrated trailing edge)**
3	91.8
4	92.1
5	93.9
6	97.1
7	100.4
8	103.0
9	103.7
10	103.7
11	103.7
12	103.7
13	103.7
14	103.7
15	103.7
16	103.7
17	103.7
18	103.7
19	103.7
20	103.7

Table 7-9: Sound curves, Sound Optimized Mode SO2

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.10 Power Curves, Sound Optimized Mode SO2 (HWO)

Air density [kg/m³]														
Wind speed [m/s]	**1.225**	**0.95**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**22**	10	11	12	13	13	15	16	17	18	19	21	23	24
3.5	**78**	49	52	54	57	60	62	65	67	70	73	75	81	83
4.0	**150**	105	110	114	118	122	126	130	134	138	142	146	154	158
4.5	**236**	172	178	184	190	196	201	207	213	219	225	231	242	248
5.0	**340**	252	260	268	276	284	292	300	308	316	324	332	348	356
5.5	**465**	349	360	370	381	392	402	413	423	434	444	455	476	487
6.0	**617**	466	480	494	508	521	535	549	562	576	590	603	631	644
6.5	**796**	605	622	640	657	675	692	709	727	744	762	779	813	831
7.0	**1005**	767	789	811	832	854	876	898	919	941	962	984	1027	1049
7.5	**1248**	955	982	1008	1035	1062	1088	1115	1142	1168	1195	1221	1274	1300
8.0	**1526**	1170	1203	1235	1268	1300	1332	1365	1397	1429	1461	1494	1557	1589
8.5	**1830**	1409	1448	1486	1525	1563	1601	1640	1678	1716	1754	1792	1868	1905
9.0	**2151**	1665	1709	1754	1799	1843	1887	1932	1976	2020	2064	2107	2194	2237
9.5	**2459**	1923	1974	2024	2075	2125	2174	2223	2272	2321	2367	2413	2502	2545
10.0	**2712**	2164	2219	2274	2329	2385	2435	2485	2536	2586	2628	2670	2746	2780
10.5	**2878**	2382	2438	2494	2550	2606	2650	2695	2740	2785	2816	2847	2900	2923
11.0	**2982**	2581	2630	2680	2729	2778	2813	2848	2882	2917	2939	2960	2996	3009
11.5	**3058**	2781	2820	2859	2898	2936	2958	2980	3002	3025	3036	3047	3065	3071
12.0	**3109**	2957	2982	3006	3030	3055	3065	3076	3087	3097	3101	3105	3111	3113
12.5	**3139**	3073	3085	3097	3109	3121	3125	3128	3132	3136	3137	3138	3139	3140
13.0	**3160**	3137	3141	3146	3150	3155	3156	3157	3158	3159	3159	3159	3160	3160
13.5	**3179**	3165	3167	3170	3173	3176	3177	3177	3178	3179	3179	3179	3178	3178
14.0	**3197**	3193	3194	3195	3196	3197	3197	3197	3197	3197	3197	3197	3197	3196
14.5	**3214**	3214	3215	3215	3215	3215	3215	3215	3215	3215	3215	3214	3214	3214
15.0	**3229**	3230	3230	3230	3230	3231	3230	3230	3230	3230	3230	3230	3229	3229
15.5	**3242**	3243	3243	3243	3243	3243	3243	3242	3242	3242	3242	3242	3241	3241
16.0	**3251**	3252	3252	3252	3252	3252	3252	3252	3251	3251	3251	3251	3250	3250
16.5	**3260**	3262	3262	3262	3262	3262	3261	3261	3261	3261	3260	3260	3259	3259
17.0	**3271**	3275	3274	3274	3274	3274	3273	3273	3273	3272	3272	3272	3271	3270
17.5	**3284**	3287	3287	3287	3286	3286	3286	3285	3285	3285	3284	3284	3283	3283
18.0	**3294**	3296	3296	3296	3295	3295	3295	3295	3295	3294	3294	3294	3294	3293
18.5	**3299**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3299	3299	3299
19.0	**3301**	3301	3301	3301	3301	3301	3301	3301	3301	3301	3301	3301	3301	3301
19.5	**3302**	3303	3303	3303	3302	3302	3302	3302	3302	3302	3302	3302	3301	3301
20.0	**3306**	3308	3308	3308	3308	3307	3307	3307	3306	3306	3306	3306	3306	3305
20.5	**3313**	3316	3316	3315	3315	3315	3314	3314	3314	3313	3313	3313	3312	3312
21.0	**3320**	3324	3323	3323	3322	3322	3322	3322	3321	3321	3321	3321	3320	3320
21.5	**3329**	3334	3333	3333	3332	3332	3331	3331	3330	3330	3330	3329	3328	3328
22.0	**3340**	3345	3345	3344	3344	3343	3343	3342	3342	3342	3341	3341	3340	3339
22.5	**3351**	3354	3354	3354	3353	3353	3353	3353	3353	3352	3352	3351	3351	3350
23.0	**3342**	3320	3322	3325	3327	3329	3331	3333	3335	3338	3339	3341	3344	3345
23.5	**3275**	3221	3226	3232	3237	3243	3247	3252	3257	3262	3266	3271	3280	3284
24.0	**3134**	3051	3058	3066	3074	3081	3089	3096	3104	3111	3119	3127	3141	3149
24.5	**2926**	2827	2835	2844	2852	2861	2870	2879	2887	2896	2906	2916	2934	2943
25.0	**2677**	2585	2593	2601	2610	2618	2626	2634	2642	2650	2659	2668	2685	2693
25.5	**2430**	2347	2354	2362	2369	2376	2384	2391	2399	2406	2414	2422	2437	2445
26.0	**2171**	2101	2106	2112	2117	2123	2131	2138	2146	2154	2159	2165	2178	2186
26.5	**1918**	1856	1862	1868	1874	1880	1885	1890	1894	1899	1906	1912	1923	1929
27.0	**1664**	1614	1619	1624	1628	1633	1638	1642	1646	1650	1655	1659	1669	1674
27.5	**1427**	1379	1383	1387	1391	1396	1399	1403	1407	1411	1417	1422	1430	1434
28.0	**1224**	1191	1195	1199	1203	1207	1209	1211	1214	1216	1219	1221	1228	1232
28.5	**1090**	1077	1078	1079	1080	1081	1082	1084	1085	1086	1087	1088	1091	1093
29.0	**1046**	1043	1043	1043	1044	1044	1044	1044	1044	1045	1045	1045	1046	1047
29.5	**1036**	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1037
30.0	**1035**	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035

Table 7-10: Power curve, Sound Optimized Mode SO2 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.11 Ct Values, Sound Optimized Mode SO2 (HWO)

Air density kg/m³														
Wind speed [m/s]	**1.225**	**0.950**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**0.873**	0.878	0.878	0.877	0.877	0.877	0.876	0.876	0.875	0.875	0.874	0.874	0.873	0.873
3.5	**0.849**	0.853	0.853	0.852	0.852	0.851	0.851	0.851	0.850	0.850	0.850	0.849	0.849	0.848
4.0	**0.827**	0.831	0.831	0.831	0.830	0.830	0.829	0.829	0.829	0.828	0.828	0.827	0.826	0.826
4.5	**0.816**	0.815	0.815	0.815	0.815	0.814	0.814	0.815	0.815	0.815	0.815	0.815	0.816	0.816
5.0	**0.826**	0.825	0.825	0.825	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.825	0.825
5.5	**0.825**	0.829	0.828	0.828	0.828	0.828	0.827	0.827	0.826	0.826	0.826	0.825	0.824	0.824
6.0	**0.819**	0.825	0.824	0.824	0.823	0.823	0.822	0.822	0.821	0.821	0.820	0.820	0.819	0.818
6.5	**0.815**	0.821	0.820	0.820	0.819	0.819	0.818	0.818	0.817	0.816	0.816	0.815	0.814	0.813
7.0	**0.808**	0.815	0.815	0.814	0.814	0.813	0.812	0.812	0.811	0.810	0.809	0.809	0.807	0.806
7.5	**0.805**	0.815	0.814	0.813	0.812	0.811	0.810	0.809	0.808	0.807	0.807	0.806	0.804	0.803
8.0	**0.803**	0.814	0.813	0.812	0.811	0.810	0.809	0.808	0.807	0.806	0.805	0.804	0.802	0.800
8.5	**0.791**	0.803	0.802	0.801	0.800	0.799	0.798	0.796	0.795	0.794	0.793	0.792	0.790	0.788
9.0	**0.763**	0.775	0.774	0.773	0.772	0.771	0.770	0.769	0.768	0.767	0.766	0.765	0.762	0.760
9.5	**0.715**	0.733	0.732	0.731	0.730	0.729	0.728	0.726	0.725	0.723	0.720	0.718	0.711	0.707
10.0	**0.644**	0.675	0.674	0.673	0.672	0.671	0.668	0.666	0.663	0.660	0.655	0.650	0.637	0.629
10.5	**0.560**	0.613	0.611	0.609	0.606	0.604	0.599	0.594	0.589	0.584	0.576	0.568	0.551	0.542
11.0	**0.484**	0.556	0.551	0.547	0.542	0.537	0.530	0.523	0.516	0.509	0.501	0.492	0.474	0.465
11.5	**0.421**	0.512	0.505	0.498	0.490	0.483	0.475	0.466	0.457	0.448	0.439	0.430	0.412	0.403
12.0	**0.368**	0.471	0.462	0.452	0.443	0.433	0.424	0.414	0.404	0.394	0.386	0.377	0.360	0.352
12.5	**0.323**	0.425	0.414	0.404	0.394	0.383	0.374	0.365	0.355	0.346	0.338	0.330	0.316	0.309
13.0	**0.285**	0.377	0.367	0.357	0.348	0.338	0.329	0.321	0.313	0.305	0.298	0.291	0.279	0.273
13.5	**0.255**	0.335	0.327	0.318	0.309	0.301	0.294	0.286	0.279	0.272	0.266	0.261	0.249	0.244
14.0	**0.228**	0.299	0.291	0.284	0.276	0.268	0.262	0.256	0.250	0.243	0.238	0.233	0.223	0.219
14.5	**0.205**	0.268	0.261	0.254	0.248	0.241	0.235	0.230	0.224	0.219	0.215	0.210	0.201	0.197
15.0	**0.185**	0.240	0.234	0.228	0.222	0.216	0.211	0.207	0.202	0.197	0.193	0.189	0.181	0.178
15.5	**0.168**	0.217	0.212	0.206	0.201	0.196	0.192	0.187	0.183	0.179	0.175	0.172	0.165	0.162
16.0	**0.153**	0.197	0.192	0.187	0.183	0.178	0.174	0.170	0.167	0.163	0.159	0.156	0.150	0.147
16.5	**0.140**	0.179	0.175	0.171	0.167	0.162	0.159	0.156	0.152	0.149	0.146	0.143	0.137	0.135
17.0	**0.129**	0.164	0.160	0.157	0.153	0.149	0.146	0.143	0.140	0.137	0.134	0.131	0.126	0.124
17.5	**0.119**	0.151	0.148	0.144	0.141	0.137	0.134	0.131	0.129	0.126	0.123	0.121	0.117	0.114
18.0	**0.110**	0.139	0.136	0.133	0.130	0.126	0.124	0.121	0.119	0.116	0.114	0.112	0.108	0.106
18.5	**0.102**	0.128	0.126	0.123	0.120	0.117	0.115	0.112	0.110	0.107	0.106	0.104	0.100	0.098
19.0	**0.094**	0.118	0.115	0.113	0.110	0.108	0.105	0.103	0.101	0.099	0.097	0.095	0.092	0.090
19.5	**0.087**	0.109	0.107	0.105	0.102	0.100	0.098	0.096	0.094	0.092	0.090	0.089	0.085	0.084
20.0	**0.081**	0.102	0.100	0.097	0.095	0.093	0.091	0.089	0.087	0.086	0.084	0.083	0.080	0.078
20.5	**0.076**	0.095	0.093	0.091	0.089	0.087	0.085	0.083	0.082	0.080	0.079	0.077	0.075	0.073
21.0	**0.071**	0.089	0.087	0.085	0.083	0.081	0.080	0.078	0.077	0.075	0.074	0.072	0.070	0.069
21.5	**0.067**	0.084	0.082	0.081	0.079	0.077	0.076	0.074	0.073	0.071	0.070	0.069	0.066	0.065
22.0	**0.064**	0.079	0.077	0.076	0.074	0.072	0.071	0.070	0.068	0.067	0.066	0.065	0.063	0.061
22.5	**0.060**	0.074	0.073	0.071	0.070	0.068	0.067	0.066	0.064	0.063	0.062	0.061	0.059	0.058
23.0	**0.056**	0.069	0.068	0.066	0.065	0.063	0.062	0.061	0.060	0.059	0.058	0.057	0.055	0.054
23.5	**0.052**	0.063	0.062	0.061	0.060	0.058	0.057	0.056	0.055	0.055	0.054	0.053	0.051	0.051
24.0	**0.047**	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.050	0.049	0.049	0.048	0.047	0.046
24.5	**0.042**	0.050	0.049	0.048	0.047	0.046	0.046	0.045	0.044	0.044	0.043	0.043	0.041	0.041
25.0	**0.037**	0.043	0.043	0.042	0.041	0.040	0.040	0.039	0.039	0.038	0.038	0.037	0.036	0.036
25.5	**0.032**	0.038	0.037	0.037	0.036	0.035	0.035	0.034	0.034	0.033	0.033	0.032	0.032	0.031
26.0	**0.027**	0.032	0.032	0.031	0.031	0.030	0.030	0.029	0.029	0.029	0.028	0.028	0.027	0.027
26.5	**0.023**	0.028	0.027	0.027	0.026	0.026	0.025	0.025	0.025	0.024	0.024	0.024	0.023	0.023
27.0	**0.020**	0.023	0.023	0.023	0.022	0.022	0.022	0.021	0.021	0.021	0.020	0.020	0.020	0.020
27.5	**0.017**	0.020	0.019	0.019	0.019	0.018	0.018	0.018	0.018	0.017	0.017	0.017	0.017	0.017
28.0	**0.014**	0.017	0.016	0.016	0.016	0.016	0.015	0.015	0.015	0.015	0.015	0.015	0.014	0.014
28.5	**0.013**	0.015	0.014	0.014	0.014	0.014	0.014	0.013	0.013	0.013	0.013	0.013	0.012	0.012
29.0	**0.012**	0.014	0.014	0.013	0.013	0.013	0.013	0.013	0.012	0.012	0.012	0.012	0.012	0.012
29.5	**0.011**	0.013	0.013	0.013	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.011	0.011
30.0	**0.011**	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.011	0.011	0.011	0.011	0.011

Table 7-11: C_t values, Sound Optimized Mode SO2 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.12 Sound Curves, Sound Optimized Mode SO2 (HWO)

Sound Power Level at Hub Height	
Conditions for Sound Power Level:	**Measurement standard IEC 61400-11 ed. 3** **Maximum turbulence at hub height: 30%** **Inflow angle (vertical): 0 ±2°** **Air density: 1.225 kg/m^3**
Wind speed at hub height [m/s]	**Sound Power Level at Hub Height [dBA]** **Sound Optimized Mode SO2** (not available for hub height 116.5 m in IEC IB climate) **(Blades with serrated trailing edge)**
3	91.8
4	92.1
5	93.9
6	97.1
7	100.4
8	103.0
9	103.7
10	103.7
11	103.7
12	103.7
13	103.7
14	103.7
15	103.7
16	103.7
17	103.7
18	103.7
19	103.7
20	103.7

Table 7-12: Sound curves, Sound Optimized Mode SO2 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.13 Power Curves, Sound Optimized Mode SO3

Air density [kg/m³]														
Wind speed [m/s]	**1.225**	**0.95**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**22**	10	11	12	12	13	15	16	17	18	19	21	23	24
3.5	**78**	49	52	54	57	60	62	65	67	70	73	75	81	83
4.0	**150**	105	110	114	118	122	126	130	134	138	142	146	154	158
4.5	**236**	172	178	184	190	196	201	207	213	219	225	231	242	248
5.0	**340**	252	260	268	276	284	292	300	308	316	324	332	348	356
5.5	**465**	349	360	370	381	392	402	413	423	434	444	455	476	487
6.0	**617**	466	480	494	508	521	535	549	562	576	590	603	631	644
6.5	**797**	605	623	640	658	675	692	710	727	744	762	779	814	831
7.0	**1008**	769	791	813	835	856	878	900	922	943	965	986	1030	1052
7.5	**1250**	956	983	1010	1037	1063	1090	1117	1143	1170	1197	1223	1276	1303
8.0	**1520**	1167	1199	1231	1264	1296	1328	1360	1392	1424	1456	1488	1552	1584
8.5	**1809**	1395	1433	1471	1509	1546	1584	1622	1659	1697	1734	1772	1846	1883
9.0	**2091**	1622	1665	1708	1752	1795	1838	1880	1923	1966	2008	2049	2132	2172
9.5	**2326**	1835	1882	1930	1978	2025	2070	2115	2160	2205	2246	2286	2362	2397
10.0	**2491**	2032	2082	2132	2181	2230	2272	2314	2356	2397	2428	2460	2515	2539
10.5	**2595**	2230	2275	2320	2366	2411	2442	2473	2504	2535	2555	2575	2608	2622
11.0	**2664**	2407	2442	2478	2514	2549	2570	2591	2611	2632	2643	2654	2670	2676
11.5	**2716**	2572	2595	2618	2641	2664	2674	2684	2694	2705	2709	2713	2719	2721
12.0	**2755**	2691	2702	2714	2726	2737	2741	2745	2748	2752	2753	2754	2756	2756
12.5	**2777**	2754	2758	2763	2767	2772	2773	2774	2775	2776	2777	2777	2777	2778
13.0	**2788**	2779	2781	2783	2785	2786	2787	2787	2788	2788	2788	2788	2788	2788
13.5	**2795**	2790	2791	2792	2794	2795	2795	2795	2795	2795	2795	2795	2795	2795
14.0	**2806**	2806	2806	2807	2807	2808	2808	2807	2807	2807	2807	2807	2806	2806
14.5	**2821**	2822	2822	2822	2822	2822	2822	2822	2822	2822	2822	2821	2821	2820
15.0	**2837**	2838	2838	2838	2838	2838	2838	2838	2838	2837	2837	2837	2836	2836
15.5	**2852**	2854	2854	2854	2854	2854	2854	2854	2853	2853	2853	2853	2852	2852
16.0	**2866**	2868	2868	2868	2868	2868	2868	2868	2868	2867	2867	2867	2866	2866
16.5	**2878**	2880	2879	2879	2879	2879	2879	2879	2879	2878	2878	2878	2878	2877
17.0	**2887**	2889	2889	2888	2888	2888	2888	2888	2888	2888	2887	2887	2886	2886
17.5	**2896**	2898	2898	2898	2898	2898	2897	2897	2897	2896	2896	2896	2895	2895
18.0	**2907**	2911	2910	2910	2910	2909	2909	2909	2908	2908	2908	2907	2907	2906
18.5	**2921**	2924	2924	2924	2924	2923	2923	2922	2922	2922	2921	2921	2920	2920
19.0	**2934**	2938	2937	2937	2937	2936	2936	2936	2936	2935	2935	2934	2934	2933
19.5	**2944**	2947	2947	2947	2946	2946	2946	2946	2945	2945	2945	2945	2944	2944
20.0	**2952**	2953	2953	2953	2952	2952	2952	2952	2952	2952	2952	2952	2951	2951
20.5	**2955**	2956	2956	2956	2956	2956	2956	2956	2956	2955	2955	2955	2955	2955
21.0	**2959**	2960	2960	2960	2960	2960	2960	2960	2959	2959	2959	2959	2959	2958
21.5	**2964**	2967	2967	2967	2966	2966	2966	2966	2966	2965	2965	2965	2964	2964
22.0	**2972**	2974	2974	2974	2974	2973	2973	2973	2973	2972	2972	2972	2971	2971
22.5	**2978**	2980	2980	2980	2980	2980	2979	2979	2979	2979	2979	2978	2978	2978
23.0	**2982**	2985	2984	2984	2984	2984	2984	2983	2983	2983	2983	2983	2982	2982
23.5	**2987**	2989	2989	2988	2988	2988	2988	2988	2988	2988	2987	2987	2987	2987
24.0	**2990**	2991	2991	2991	2991	2991	2991	2991	2991	2991	2991	2991	2990	2990
24.5	**2992**	2993	2993	2993	2993	2993	2993	2993	2993	2993	2993	2993	2992	2992
25.0	**2994**	2994	2994	2994	2994	2994	2994	2994	2994	2994	2994	2994	2994	2994

Table 7-13: Power curve, Sound Optimized Mode SO3

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.14 Ct Values, Sound Optimized Mode SO3

Air density kg/m³														
Wind speed [m/s]	**1.225**	**0.950**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**0.873**	0.878	0.878	0.877	0.877	0.877	0.876	0.876	0.875	0.875	0.874	0.874	0.873	0.873
3.5	**0.849**	0.853	0.853	0.852	0.852	0.851	0.851	0.851	0.850	0.850	0.850	0.849	0.849	0.848
4.0	**0.827**	0.831	0.831	0.831	0.830	0.830	0.829	0.829	0.829	0.828	0.828	0.827	0.826	0.826
4.5	**0.816**	0.815	0.815	0.815	0.815	0.814	0.814	0.815	0.815	0.815	0.815	0.815	0.816	0.816
5.0	**0.826**	0.825	0.825	0.825	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.825	0.825
5.5	**0.825**	0.829	0.828	0.828	0.828	0.828	0.827	0.827	0.827	0.826	0.826	0.825	0.824	0.824
6.0	**0.819**	0.825	0.824	0.824	0.823	0.823	0.822	0.822	0.821	0.821	0.820	0.820	0.819	0.818
6.5	**0.818**	0.824	0.823	0.823	0.822	0.822	0.821	0.821	0.820	0.820	0.819	0.818	0.817	0.817
7.0	**0.815**	0.823	0.822	0.821	0.821	0.820	0.819	0.819	0.818	0.817	0.817	0.816	0.814	0.814
7.5	**0.810**	0.819	0.819	0.818	0.817	0.816	0.815	0.815	0.814	0.813	0.812	0.811	0.809	0.808
8.0	**0.796**	0.806	0.805	0.804	0.803	0.803	0.802	0.801	0.800	0.799	0.798	0.797	0.795	0.794
8.5	**0.767**	0.777	0.776	0.775	0.774	0.773	0.773	0.772	0.771	0.770	0.769	0.768	0.766	0.765
9.0	**0.715**	0.725	0.724	0.723	0.722	0.722	0.721	0.720	0.719	0.718	0.717	0.716	0.714	0.712
9.5	**0.642**	0.661	0.661	0.660	0.659	0.658	0.657	0.655	0.653	0.652	0.648	0.645	0.637	0.632
10.0	**0.560**	0.601	0.599	0.598	0.596	0.594	0.590	0.587	0.583	0.579	0.573	0.566	0.552	0.544
10.5	**0.484**	0.553	0.549	0.545	0.541	0.537	0.530	0.523	0.516	0.509	0.501	0.492	0.475	0.466
11.0	**0.419**	0.506	0.499	0.493	0.486	0.480	0.471	0.463	0.454	0.446	0.437	0.428	0.410	0.401
11.5	**0.364**	0.464	0.455	0.446	0.437	0.429	0.419	0.410	0.400	0.391	0.382	0.373	0.356	0.348
12.0	**0.319**	0.420	0.410	0.400	0.390	0.380	0.370	0.361	0.352	0.343	0.335	0.327	0.313	0.306
12.5	**0.281**	0.373	0.363	0.353	0.343	0.333	0.325	0.317	0.309	0.301	0.294	0.288	0.275	0.269
13.0	**0.248**	0.328	0.319	0.310	0.302	0.293	0.286	0.279	0.272	0.265	0.260	0.254	0.243	0.238
13.5	**0.222**	0.291	0.283	0.276	0.268	0.261	0.255	0.249	0.243	0.237	0.232	0.227	0.217	0.213
14.0	**0.198**	0.259	0.253	0.246	0.239	0.233	0.228	0.222	0.217	0.212	0.207	0.203	0.195	0.191
14.5	**0.179**	0.233	0.227	0.221	0.215	0.209	0.205	0.200	0.195	0.191	0.187	0.183	0.176	0.172
15.0	**0.162**	0.209	0.204	0.199	0.194	0.188	0.184	0.180	0.176	0.172	0.168	0.165	0.158	0.155
15.5	**0.147**	0.189	0.185	0.180	0.176	0.171	0.168	0.164	0.160	0.156	0.153	0.150	0.144	0.142
16.0	**0.134**	0.173	0.168	0.164	0.160	0.156	0.153	0.149	0.146	0.143	0.140	0.137	0.132	0.129
16.5	**0.123**	0.158	0.154	0.150	0.146	0.143	0.140	0.137	0.134	0.131	0.128	0.126	0.121	0.119
17.0	**0.113**	0.144	0.141	0.138	0.134	0.131	0.128	0.126	0.123	0.120	0.118	0.116	0.111	0.109
17.5	**0.104**	0.133	0.130	0.127	0.124	0.121	0.118	0.116	0.113	0.111	0.109	0.107	0.103	0.101
18.0	**0.097**	0.123	0.120	0.117	0.114	0.111	0.109	0.107	0.105	0.102	0.101	0.099	0.095	0.093
18.5	**0.090**	0.114	0.111	0.109	0.106	0.103	0.101	0.099	0.097	0.095	0.093	0.092	0.088	0.087
19.0	**0.083**	0.105	0.103	0.100	0.098	0.096	0.094	0.092	0.090	0.088	0.086	0.085	0.082	0.080
19.5	**0.078**	0.098	0.096	0.093	0.091	0.089	0.087	0.086	0.084	0.082	0.081	0.079	0.076	0.075
20.0	**0.073**	0.091	0.089	0.087	0.085	0.083	0.081	0.080	0.078	0.077	0.075	0.074	0.071	0.070
20.5	**0.068**	0.085	0.083	0.081	0.079	0.078	0.076	0.075	0.073	0.072	0.070	0.069	0.067	0.066
21.0	**0.064**	0.079	0.078	0.076	0.074	0.073	0.071	0.070	0.068	0.067	0.066	0.065	0.063	0.062
21.5	**0.060**	0.075	0.073	0.072	0.070	0.069	0.067	0.066	0.065	0.064	0.062	0.061	0.059	0.058
22.0	**0.057**	0.071	0.069	0.068	0.066	0.065	0.063	0.062	0.061	0.060	0.059	0.058	0.056	0.055
22.5	**0.054**	0.066	0.065	0.064	0.062	0.061	0.060	0.059	0.058	0.056	0.055	0.055	0.053	0.052
23.0	**0.050**	0.062	0.061	0.060	0.058	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.050	0.049
23.5	**0.048**	0.059	0.058	0.056	0.055	0.054	0.053	0.052	0.051	0.05	0.049	0.048	0.047	0.046
24.0	**0.045**	0.055	0.054	0.053	0.052	0.051	0.050	0.049	0.048	0.047	0.047	0.046	0.044	0.044
24.5	**0.043**	0.052	0.051	0.050	0.049	0.048	0.047	0.047	0.046	0.045	0.044	0.043	0.042	0.041
25.0	**0.041**	0.050	0.049	0.048	0.047	0.046	0.045	0.044	0.043	0.043	0.042	0.041	0.040	0.039

Table 7-14: C_t values, Sound Optimized Mode SO3

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.15 Sound Curves, Sound Optimized Mode SO3

Sound Power Level at Hub Height	
Conditions for Sound Power Level:	**Measurement standard IEC 61400-11 ed. 3** **Maximum turbulence at hub height: 30%** **Inflow angle (vertical): 0 ±2°** **Air density: 1.225 kg/m^3**
Wind speed at hub height [m/s]	**Sound Power Level at Hub Height [dBA]** **Sound Optimized Mode SO3** (not available for hub height 116.5 m) **(Blades with serrated trailing edge)**
3	91.8
4	92.1
5	93.9
6	97.1
7	100.2
8	102.0
9	102.4
10	102.4
11	102.4
12	102.4
13	102.4
14	102.4
15	102.4
16	102.4
17	102.4
18	102.4
19	102.4
20	102.4

Table 7-15: Sound curves, Sound Optimized Mode SO3

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.16 Power Curves, Sound Optimized Mode SO3 (HWO)

Air density [kg/m³]														
Wind speed [m/s]	**1.225**	**0.95**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**22**	10	11	12	12	13	15	16	17	18	19	21	23	24
3.5	**78**	49	52	54	57	60	62	65	67	70	73	75	81	83
4.0	**150**	105	110	114	118	122	126	130	134	138	142	146	154	158
4.5	**236**	172	178	184	190	196	201	207	213	219	225	231	242	248
5.0	**340**	252	260	268	276	284	292	300	308	316	324	332	348	356
5.5	**466**	349	360	370	381	392	402	413	423	434	444	455	476	487
6.0	**617**	466	480	494	508	521	535	549	562	576	590	603	631	644
6.5	**797**	605	623	640	658	675	692	710	727	744	762	779	814	831
7.0	**1008**	769	791	813	835	856	878	900	922	943	965	986	1030	1052
7.5	**1250**	956	983	1010	1037	1063	1090	1117	1143	1170	1197	1223	1276	1303
8.0	**1520**	1167	1199	1231	1264	1296	1328	1360	1392	1424	1456	1488	1552	1584
8.5	**1809**	1395	1433	1471	1509	1547	1584	1622	1659	1697	1734	1772	1846	1883
9.0	**2091**	1622	1665	1709	1752	1795	1838	1880	1923	1966	2008	2049	2132	2172
9.5	**2327**	1835	1882	1930	1978	2025	2070	2115	2160	2205	2246	2286	2362	2397
10.0	**2491**	2033	2082	2132	2181	2231	2272	2314	2356	2397	2428	2460	2515	2539
10.5	**2595**	2230	2275	2320	2366	2411	2442	2473	2504	2535	2555	2575	2608	2622
11.0	**2665**	2407	2442	2478	2514	2549	2570	2591	2611	2632	2643	2654	2670	2676
11.5	**2717**	2572	2595	2618	2641	2664	2674	2684	2694	2705	2709	2713	2719	2721
12.0	**2755**	2691	2702	2714	2726	2737	2741	2745	2748	2752	2753	2754	2756	2756
12.5	**2777**	2754	2758	2763	2767	2772	2773	2774	2775	2776	2777	2777	2777	2778
13.0	**2788**	2779	2781	2783	2785	2787	2787	2787	2788	2788	2788	2788	2788	2788
13.5	**2795**	2790	2791	2792	2794	2795	2795	2795	2795	2795	2795	2795	2795	2795
14.0	**2807**	2806	2806	2807	2807	2808	2808	2807	2807	2807	2807	2807	2806	2806
14.5	**2821**	2823	2823	2823	2823	2823	2822	2822	2822	2822	2822	2821	2821	2820
15.0	**2837**	2838	2838	2838	2838	2838	2838	2838	2838	2837	2837	2837	2836	2836
15.5	**2852**	2855	2854	2854	2854	2854	2854	2854	2853	2853	2853	2853	2852	2852
16.0	**2866**	2869	2868	2868	2868	2868	2868	2868	2868	2867	2867	2867	2866	2866
16.5	**2878**	2880	2879	2879	2879	2879	2879	2879	2879	2878	2878	2878	2878	2877
17.0	**2887**	2889	2889	2889	2888	2888	2888	2888	2888	2888	2887	2887	2886	2886
17.5	**2896**	2899	2898	2898	2898	2898	2897	2897	2897	2897	2896	2896	2895	2895
18.0	**2907**	2911	2910	2910	2910	2909	2909	2909	2908	2908	2908	2907	2907	2906
18.5	**2921**	2925	2924	2924	2924	2923	2923	2923	2922	2922	2921	2921	2920	2920
19.0	**2934**	2938	2937	2937	2937	2937	2936	2936	2936	2935	2935	2935	2934	2933
19.5	**2944**	2947	2947	2947	2946	2946	2946	2946	2945	2945	2945	2945	2944	2944
20.0	**2952**	2953	2953	2953	2953	2952	2952	2952	2952	2952	2952	2952	2951	2951
20.5	**2955**	2956	2956	2956	2956	2956	2956	2956	2956	2955	2955	2955	2955	2955
21.0	**2959**	2960	2960	2960	2960	2960	2960	2960	2959	2959	2959	2959	2959	2959
21.5	**2965**	2967	2967	2967	2966	2966	2966	2966	2966	2965	2965	2965	2964	2964
22.0	**2972**	2975	2974	2974	2974	2973	2973	2973	2973	2973	2972	2972	2971	2971
22.5	**2978**	2980	2980	2980	2980	2980	2979	2979	2979	2979	2979	2978	2978	2978
23.0	**2982**	2985	2984	2984	2984	2984	2984	2983	2983	2983	2983	2983	2982	2982
23.5	**2984**	2976	2977	2978	2979	2980	2980	2981	2982	2982	2983	2983	2984	2984
24.0	**2947**	2913	2916	2919	2923	2926	2929	2932	2935	2939	2941	2944	2949	2952
24.5	**2839**	2774	2781	2787	2793	2799	2805	2810	2816	2822	2827	2833	2845	2850
25.0	**2656**	2577	2584	2592	2599	2606	2613	2621	2628	2636	2642	2649	2664	2672
25.5	**2432**	2350	2357	2365	2372	2380	2387	2395	2402	2409	2417	2425	2440	2448
26.0	**2177**	2101	2108	2115	2122	2129	2136	2143	2150	2157	2164	2170	2185	2193
26.5	**1928**	1863	1868	1874	1880	1885	1892	1898	1904	1911	1917	1922	1934	1939
27.0	**1664**	1610	1615	1621	1626	1631	1637	1642	1648	1653	1657	1660	1670	1675
27.5	**1428**	1380	1384	1389	1393	1397	1401	1405	1409	1413	1418	1423	1431	1434
28.0	**1226**	1191	1195	1199	1203	1207	1209	1211	1214	1216	1219	1222	1229	1232
28.5	**1090**	1077	1078	1079	1080	1081	1082	1084	1085	1086	1087	1088	1091	1093
29.0	**1046**	1043	1043	1043	1044	1044	1044	1044	1044	1045	1045	1045	1046	1047
29.5	**1036**	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1037
30.0	**1035**	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035

Table 7-16: Power curve, Sound Optimized Mode SO3 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.17 Ct Values, Sound Optimized Mode SO3 (HWO)

Air density kg/m³														
Wind speed [m/s]	**1.225**	**0.950**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**0.873**	0.878	0.878	0.877	0.877	0.877	0.876	0.876	0.875	0.875	0.874	0.874	0.873	0.873
3.5	**0.849**	0.853	0.853	0.852	0.852	0.851	0.851	0.851	0.850	0.850	0.850	0.849	0.849	0.848
4.0	**0.827**	0.831	0.831	0.831	0.830	0.830	0.829	0.829	0.829	0.828	0.828	0.827	0.826	0.826
4.5	**0.816**	0.815	0.815	0.815	0.815	0.814	0.814	0.815	0.815	0.815	0.815	0.815	0.816	0.816
5.0	**0.826**	0.825	0.825	0.825	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.825	0.825
5.5	**0.825**	0.829	0.828	0.828	0.828	0.828	0.827	0.827	0.827	0.826	0.826	0.825	0.824	0.824
6.0	**0.819**	0.825	0.824	0.824	0.823	0.823	0.822	0.822	0.821	0.821	0.820	0.820	0.819	0.818
6.5	**0.818**	0.824	0.823	0.823	0.822	0.822	0.821	0.821	0.820	0.820	0.819	0.818	0.817	0.817
7.0	**0.815**	0.823	0.822	0.821	0.821	0.820	0.819	0.819	0.818	0.817	0.817	0.816	0.814	0.814
7.5	**0.810**	0.819	0.819	0.818	0.817	0.816	0.815	0.815	0.814	0.813	0.812	0.811	0.809	0.808
8.0	**0.796**	0.806	0.805	0.804	0.803	0.803	0.802	0.801	0.800	0.799	0.798	0.797	0.795	0.794
8.5	**0.767**	0.777	0.776	0.775	0.774	0.773	0.773	0.772	0.771	0.770	0.769	0.768	0.766	0.765
9.0	**0.715**	0.725	0.724	0.723	0.722	0.722	0.721	0.720	0.719	0.718	0.717	0.716	0.714	0.712
9.5	**0.642**	0.661	0.661	0.660	0.659	0.658	0.657	0.655	0.653	0.652	0.648	0.645	0.637	0.632
10.0	**0.560**	0.601	0.599	0.598	0.596	0.594	0.590	0.587	0.583	0.579	0.573	0.566	0.552	0.544
10.5	**0.484**	0.553	0.549	0.545	0.541	0.537	0.530	0.523	0.516	0.509	0.501	0.492	0.475	0.466
11.0	**0.419**	0.506	0.499	0.493	0.486	0.480	0.471	0.463	0.454	0.446	0.437	0.428	0.410	0.401
11.5	**0.364**	0.464	0.455	0.446	0.437	0.429	0.419	0.410	0.400	0.391	0.382	0.373	0.356	0.348
12.0	**0.319**	0.420	0.410	0.400	0.390	0.380	0.370	0.361	0.352	0.343	0.335	0.327	0.313	0.306
12.5	**0.281**	0.373	0.363	0.353	0.343	0.333	0.325	0.317	0.309	0.301	0.294	0.288	0.275	0.269
13.0	**0.248**	0.328	0.319	0.310	0.302	0.293	0.286	0.279	0.272	0.265	0.260	0.254	0.243	0.238
13.5	**0.222**	0.291	0.283	0.276	0.268	0.261	0.255	0.249	0.243	0.237	0.232	0.227	0.217	0.213
14.0	**0.198**	0.259	0.253	0.246	0.239	0.233	0.228	0.222	0.217	0.212	0.207	0.203	0.195	0.191
14.5	**0.179**	0.233	0.227	0.221	0.215	0.209	0.205	0.200	0.195	0.191	0.187	0.183	0.176	0.172
15.0	**0.162**	0.209	0.204	0.199	0.194	0.188	0.184	0.180	0.176	0.172	0.168	0.165	0.158	0.155
15.5	**0.147**	0.189	0.185	0.180	0.176	0.171	0.168	0.164	0.160	0.156	0.153	0.150	0.144	0.142
16.0	**0.134**	0.173	0.168	0.164	0.160	0.156	0.153	0.149	0.146	0.143	0.140	0.137	0.132	0.129
16.5	**0.123**	0.158	0.154	0.150	0.146	0.143	0.140	0.137	0.134	0.131	0.128	0.126	0.121	0.119
17.0	**0.113**	0.144	0.141	0.138	0.134	0.131	0.128	0.126	0.123	0.120	0.118	0.116	0.111	0.109
17.5	**0.104**	0.133	0.130	0.127	0.124	0.121	0.118	0.116	0.113	0.111	0.109	0.107	0.103	0.101
18.0	**0.097**	0.123	0.120	0.117	0.114	0.111	0.109	0.107	0.105	0.102	0.101	0.099	0.095	0.093
18.5	**0.090**	0.114	0.111	0.109	0.106	0.103	0.101	0.099	0.097	0.095	0.093	0.092	0.088	0.087
19.0	**0.083**	0.105	0.103	0.100	0.098	0.096	0.094	0.092	0.090	0.088	0.086	0.085	0.082	0.080
19.5	**0.078**	0.098	0.096	0.093	0.091	0.089	0.087	0.086	0.084	0.082	0.081	0.079	0.076	0.075
20.0	**0.073**	0.091	0.089	0.087	0.085	0.083	0.081	0.080	0.078	0.077	0.075	0.074	0.071	0.070
20.5	**0.068**	0.085	0.083	0.081	0.079	0.078	0.076	0.075	0.073	0.072	0.070	0.069	0.067	0.066
21.0	**0.064**	0.079	0.078	0.076	0.074	0.073	0.071	0.070	0.068	0.067	0.066	0.065	0.063	0.062
21.5	**0.060**	0.075	0.073	0.072	0.070	0.069	0.067	0.066	0.065	0.064	0.062	0.061	0.059	0.058
22.0	**0.057**	0.071	0.069	0.068	0.066	0.065	0.063	0.062	0.061	0.060	0.059	0.058	0.056	0.055
22.5	**0.054**	0.066	0.065	0.064	0.062	0.061	0.060	0.059	0.058	0.056	0.055	0.055	0.053	0.052
23.0	**0.050**	0.062	0.061	0.060	0.058	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.050	0.049
23.5	**0.048**	0.058	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.050	0.049	0.048	0.047	0.046
24.0	**0.044**	0.054	0.053	0.052	0.051	0.050	0.049	0.048	0.047	0.047	0.046	0.045	0.044	0.043
24.5	**0.041**	0.049	0.048	0.047	0.046	0.045	0.045	0.044	0.043	0.043	0.042	0.041	0.040	0.040
25.0	**0.036**	0.043	0.043	0.042	0.041	0.040	0.040	0.039	0.039	0.038	0.037	0.037	0.036	0.035
25.5	**0.032**	0.038	0.037	0.037	0.036	0.035	0.035	0.034	0.034	0.033	0.033	0.033	0.032	0.031
26.0	**0.028**	0.033	0.032	0.031	0.031	0.030	0.030	0.030	0.029	0.029	0.028	0.028	0.027	0.027
26.5	**0.024**	0.028	0.027	0.027	0.026	0.026	0.026	0.025	0.025	0.025	0.024	0.024	0.023	0.023
27.0	**0.020**	0.023	0.023	0.023	0.022	0.022	0.022	0.021	0.021	0.021	0.021	0.020	0.020	0.020
27.5	**0.017**	0.020	0.019	0.019	0.019	0.018	0.018	0.018	0.018	0.017	0.017	0.017	0.017	0.017
28.0	**0.014**	0.017	0.016	0.016	0.016	0.016	0.015	0.015	0.015	0.015	0.015	0.015	0.014	0.014
28.5	**0.013**	0.015	0.014	0.014	0.014	0.014	0.014	0.013	0.013	0.013	0.013	0.013	0.012	0.012
29.0	**0.012**	0.014	0.014	0.013	0.013	0.013	0.013	0.013	0.012	0.012	0.012	0.012	0.012	0.012
29.5	**0.011**	0.013	0.013	0.013	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.011	0.011
30.0	**0.011**	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.011	0.011	0.011	0.011	0.011

Table 7-17: C_t values, Sound Optimized Mode SO3 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.18 Sound Curves, Sound Optimized Mode SO3 (HWO)

Sound Power Level at Hub Height	
Conditions for Sound Power Level:	**Measurement standard IEC 61400-11 ed. 3** **Maximum turbulence at hub height: 30%** **Inflow angle (vertical): 0 ±2°** **Air density: 1.225 kg/m^3**
Wind speed at hub height [m/s]	**Sound Power Level at Hub Height [dBA]** **Sound Optimized Mode SO3** (not available for hub height 116.5 m) **(Blades with serrated trailing edge)**
3	91.8
4	92.1
5	93.9
6	97.1
7	100.2
8	102.0
9	102.4
10	102.4
11	102.4
12	102.4
13	102.4
14	102.4
15	102.4
16	102.4
17	102.4
18	102.4
19	102.4
20	102.4

Table 7-18: Sound curves, Sound Optimized Mode SO3 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.19 Power Curves, Sound Optimized Mode SO4

Air density [kg/m³]														
Wind speed [m/s]	**1.225**	**0.95**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**22**	9	10	11	12	13	15	16	17	18	19	21	23	24
3.5	**78**	49	52	54	57	59	62	65	67	70	73	75	81	83
4.0	**150**	105	110	114	118	122	126	130	134	138	142	146	154	158
4.5	**236**	172	178	184	190	196	201	207	213	219	225	231	242	248
5.0	**340**	252	260	268	276	284	292	300	308	316	324	332	348	356
5.5	**466**	349	360	370	381	392	402	413	423	434	445	455	476	487
6.0	**617**	467	480	494	508	522	535	549	563	576	590	604	631	645
6.5	**797**	606	623	640	658	675	693	710	727	745	762	780	814	832
7.0	**1005**	768	790	812	834	855	877	899	920	942	963	984	1025	1046
7.5	**1185**	951	976	1002	1027	1052	1073	1094	1115	1136	1152	1169	1199	1212
8.0	**1269**	1130	1149	1168	1187	1206	1217	1229	1241	1253	1258	1264	1273	1277
8.5	**1290**	1241	1248	1256	1264	1272	1275	1279	1282	1286	1287	1288	1290	1290
9.0	**1291**	1280	1282	1285	1287	1289	1289	1290	1290	1291	1291	1291	1291	1291
9.5	**1291**	1289	1290	1290	1290	1291	1291	1291	1291	1291	1291	1291	1291	1291
10.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
10.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
11.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
11.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
12.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
12.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
13.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
13.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
14.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
14.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
15.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
15.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
16.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
16.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
17.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
17.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
18.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
18.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
19.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
19.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
20.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
20.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
21.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
21.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
22.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
22.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
23.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
23.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
24.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
24.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
25.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291

Table 7-19: Power curve, Sound Optimized Mode SO4

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.20 Ct Values, Sound Optimized Mode SO4

Air density kg/m³														
Wind speed [m/s]	**1.225**	**0.950**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**0.873**	0.878	0.878	0.877	0.877	0.877	0.876	0.876	0.875	0.875	0.874	0.874	0.873	0.873
3.5	**0.849**	0.853	0.853	0.852	0.852	0.851	0.851	0.851	0.850	0.850	0.850	0.849	0.849	0.848
4.0	**0.827**	0.831	0.831	0.830	0.830	0.830	0.829	0.829	0.829	0.828	0.828	0.827	0.827	0.826
4.5	**0.816**	0.815	0.815	0.815	0.815	0.814	0.815	0.815	0.815	0.815	0.815	0.816	0.816	0.816
5.0	**0.826**	0.825	0.825	0.825	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.825	0.825
5.5	**0.825**	0.829	0.829	0.829	0.828	0.828	0.828	0.827	0.827	0.827	0.826	0.826	0.825	0.824
6.0	**0.823**	0.829	0.828	0.828	0.827	0.827	0.826	0.826	0.825	0.825	0.824	0.824	0.823	0.822
6.5	**0.819**	0.824	0.824	0.823	0.823	0.822	0.822	0.821	0.821	0.820	0.820	0.819	0.818	0.817
7.0	**0.807**	0.820	0.819	0.819	0.818	0.818	0.817	0.816	0.815	0.814	0.811	0.809	0.803	0.799
7.5	**0.722**	0.808	0.805	0.802	0.798	0.795	0.786	0.776	0.767	0.757	0.746	0.734	0.710	0.698
8.0	**0.579**	0.748	0.734	0.721	0.708	0.694	0.678	0.662	0.645	0.629	0.612	0.595	0.565	0.550
8.5	**0.455**	0.627	0.610	0.592	0.574	0.556	0.540	0.525	0.510	0.495	0.482	0.468	0.444	0.433
9.0	**0.367**	0.504	0.488	0.473	0.458	0.443	0.431	0.419	0.408	0.396	0.386	0.377	0.359	0.351
9.5	**0.306**	0.409	0.397	0.386	0.374	0.363	0.354	0.345	0.336	0.327	0.320	0.313	0.299	0.293
10.0	**0.258**	0.340	0.331	0.322	0.313	0.304	0.297	0.290	0.283	0.276	0.270	0.264	0.253	0.248
10.5	**0.221**	0.288	0.281	0.273	0.266	0.259	0.253	0.247	0.241	0.235	0.231	0.226	0.217	0.212
11.0	**0.191**	0.247	0.241	0.235	0.229	0.223	0.218	0.213	0.208	0.203	0.199	0.195	0.187	0.184
11.5	**0.167**	0.214	0.209	0.204	0.199	0.194	0.189	0.185	0.181	0.177	0.173	0.170	0.163	0.160
12.0	**0.146**	0.188	0.183	0.179	0.174	0.170	0.166	0.163	0.159	0.156	0.152	0.149	0.144	0.141
12.5	**0.130**	0.165	0.162	0.158	0.154	0.150	0.147	0.144	0.141	0.138	0.135	0.132	0.127	0.125
13.0	**0.116**	0.147	0.143	0.140	0.137	0.133	0.131	0.128	0.125	0.122	0.120	0.118	0.113	0.111
13.5	**0.104**	0.132	0.129	0.126	0.123	0.120	0.117	0.115	0.113	0.110	0.108	0.106	0.102	0.100
14.0	**0.094**	0.118	0.116	0.113	0.110	0.108	0.106	0.103	0.101	0.099	0.097	0.095	0.092	0.090
14.5	**0.085**	0.107	0.104	0.102	0.100	0.097	0.095	0.093	0.091	0.090	0.088	0.086	0.083	0.082
15.0	**0.077**	0.096	0.094	0.092	0.090	0.088	0.086	0.084	0.083	0.081	0.079	0.078	0.075	0.074
15.5	**0.070**	0.087	0.086	0.084	0.082	0.080	0.078	0.077	0.075	0.074	0.072	0.071	0.069	0.067
16.0	**0.064**	0.080	0.078	0.076	0.075	0.073	0.072	0.070	0.069	0.067	0.066	0.065	0.063	0.062
16.5	**0.059**	0.073	0.072	0.070	0.068	0.067	0.066	0.064	0.063	0.062	0.061	0.060	0.058	0.057
17.0	**0.054**	0.067	0.066	0.064	0.063	0.062	0.060	0.059	0.058	0.057	0.056	0.055	0.053	0.052
17.5	**0.050**	0.062	0.061	0.059	0.058	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.049	0.048
18.0	**0.046**	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.050	0.049	0.048	0.047	0.046	0.045
18.5	**0.043**	0.053	0.052	0.051	0.050	0.049	0.048	0.047	0.046	0.045	0.045	0.044	0.042	0.042
19.0	**0.040**	0.049	0.048	0.047	0.046	0.045	0.044	0.044	0.043	0.042	0.041	0.041	0.039	0.039
19.5	**0.037**	0.046	0.045	0.044	0.043	0.042	0.041	0.041	0.040	0.039	0.039	0.038	0.037	0.036
20.0	**0.035**	0.043	0.042	0.041	0.040	0.039	0.039	0.038	0.037	0.037	0.036	0.035	0.034	0.034
20.5	**0.033**	0.040	0.039	0.038	0.038	0.037	0.036	0.036	0.035	0.034	0.034	0.033	0.032	0.032
21.0	**0.031**	0.038	0.037	0.036	0.035	0.035	0.034	0.033	0.033	0.032	0.032	0.031	0.030	0.030
21.5	**0.029**	0.035	0.035	0.034	0.033	0.033	0.032	0.032	0.031	0.031	0.030	0.030	0.029	0.028
22.0	**0.028**	0.033	0.033	0.032	0.032	0.031	0.030	0.030	0.029	0.029	0.028	0.028	0.027	0.027
22.5	**0.026**	0.032	0.031	0.030	0.030	0.029	0.029	0.028	0.028	0.027	0.027	0.027	0.026	0.025
23.0	**0.025**	0.030	0.029	0.029	0.028	0.028	0.027	0.027	0.026	0.026	0.025	0.025	0.024	0.024
23.5	**0.023**	0.028	0.028	0.027	0.027	0.026	0.026	0.025	0.025	0.024	0.024	0.024	0.023	0.023
24.0	**0.022**	0.027	0.026	0.026	0.025	0.025	0.024	0.024	0.024	0.023	0.023	0.023	0.022	0.022
24.5	**0.021**	0.025	0.025	0.024	0.024	0.023	0.023	0.023	0.022	0.022	0.022	0.021	0.021	0.021
25.0	**0.020**	0.024	0.024	0.023	0.023	0.022	0.022	0.022	0.021	0.021	0.021	0.020	0.020	0.020

Table 7-20: C_t values, Sound Optimized Mode SO4

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.21 Sound Curves, Sound Optimized Mode SO4

Sound Power Level at Hub Height	
Conditions for Sound Power Level:	**Measurement standard IEC 61400-11 ed. 3** **Maximum turbulence at hub height: 30%** **Inflow angle (vertical): 0 ±2°** **Air density: 1.225 kg/m^3**
Wind speed at hub height [m/s]	**Sound Power Level at Hub Height [dBA]** **Sound Optimized Mode SO4** (not available for hub height 116.5 m in IEC IIA climate) **(Blades with serrated trailing edge)**
3	91.8
4	92.1
5	93.9
6	97.0
7	99.7
8	99.8
9	99.8
10	99.8
11	99.8
12	99.8
13	99.8
14	99.8
15	99.8
16	99.8
17	99.8
18	99.8
19	99.8
20	99.8

Table 7-21: Sound curves, Sound Optimized Mode SO4

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.22 Power Curves, Sound Optimized Mode SO4 (HWO)

Air density [kg/m³]														
Wind speed [m/s]	**1.225**	**0.95**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**22**	9	10	11	12	13	15	16	17	18	19	21	23	24
3.5	**78**	49	52	54	57	59	62	65	67	70	73	75	81	83
4.0	**150**	105	110	114	118	122	126	130	134	138	142	146	154	158
4.5	**236**	172	178	184	190	196	201	207	213	219	225	231	242	248
5.0	**340**	252	260	268	276	284	292	300	308	316	324	332	348	356
5.5	**466**	349	360	370	381	392	402	413	423	434	445	455	476	487
6.0	**617**	467	480	494	508	522	535	549	563	576	590	604	631	645
6.5	**797**	606	623	640	658	675	693	710	727	745	762	780	814	832
7.0	**1005**	768	790	812	834	855	877	899	920	942	963	984	1025	1046
7.5	**1185**	951	976	1002	1027	1052	1073	1094	1115	1136	1152	1169	1199	1212
8.0	**1269**	1130	1149	1168	1187	1206	1217	1229	1241	1253	1258	1264	1273	1277
8.5	**1290**	1241	1249	1256	1264	1272	1275	1279	1282	1286	1287	1288	1290	1290
9.0	**1291**	1280	1282	1285	1287	1289	1289	1290	1290	1291	1291	1291	1291	1291
9.5	**1291**	1289	1290	1290	1290	1291	1291	1291	1291	1291	1291	1291	1291	1291
10.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
10.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
11.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
11.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
12.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
12.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
13.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
13.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
14.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
14.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
15.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
15.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
16.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
16.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
17.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
17.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
18.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
18.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
19.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
19.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
20.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
20.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
21.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
21.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
22.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
22.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
23.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
23.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
24.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
24.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
25.0	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
25.5	**1291**	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
26.0	**1291**	1290	1290	1290	1290	1290	1290	1290	1290	1291	1291	1291	1291	1291
26.5	**1284**	1282	1282	1282	1283	1283	1283	1283	1283	1284	1284	1284	1284	1285
27.0	**1276**	1270	1271	1271	1271	1272	1272	1272	1273	1273	1274	1275	1276	1277
27.5	**1231**	1217	1218	1220	1222	1224	1225	1226	1226	1227	1229	1230	1233	1236
28.0	**1160**	1145	1146	1148	1150	1152	1153	1154	1156	1157	1158	1159	1162	1164
28.5	**1079**	1069	1070	1071	1072	1073	1074	1075	1075	1076	1077	1078	1080	1081
29.0	**1045**	1042	1043	1043	1043	1044	1044	1044	1044	1044	1045	1045	1046	1046
29.5	**1036**	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1037
30.0	**1035**	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035

Table 7-22: Power curve, Sound Optimized Mode SO4 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.23 Ct Values, Sound Optimized Mode SO4 (HWO)

Air density kg/m³														
Wind speed [m/s]	**1.225**	**0.950**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**0.873**	0.878	0.878	0.877	0.877	0.877	0.876	0.876	0.875	0.875	0.874	0.874	0.873	0.873
3.5	**0.849**	0.853	0.853	0.852	0.852	0.851	0.851	0.851	0.850	0.850	0.850	0.849	0.849	0.848
4.0	**0.827**	0.831	0.831	0.830	0.830	0.830	0.829	0.829	0.829	0.828	0.828	0.827	0.827	0.826
4.5	**0.816**	0.815	0.815	0.815	0.815	0.814	0.815	0.815	0.815	0.815	0.815	0.816	0.816	0.816
5.0	**0.826**	0.825	0.825	0.825	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.825	0.825
5.5	**0.825**	0.829	0.829	0.829	0.828	0.828	0.828	0.827	0.827	0.827	0.826	0.826	0.825	0.824
6.0	**0.823**	0.829	0.828	0.828	0.827	0.827	0.826	0.826	0.825	0.825	0.824	0.824	0.823	0.822
6.5	**0.819**	0.824	0.824	0.823	0.823	0.822	0.822	0.821	0.821	0.820	0.820	0.819	0.818	0.817
7.0	**0.807**	0.820	0.819	0.819	0.818	0.818	0.817	0.816	0.815	0.814	0.811	0.809	0.803	0.799
7.5	**0.722**	0.808	0.805	0.802	0.798	0.795	0.786	0.776	0.767	0.757	0.746	0.734	0.710	0.698
8.0	**0.579**	0.748	0.734	0.721	0.708	0.694	0.678	0.662	0.645	0.629	0.612	0.595	0.565	0.550
8.5	**0.455**	0.627	0.610	0.592	0.574	0.556	0.540	0.525	0.510	0.495	0.482	0.468	0.444	0.433
9.0	**0.367**	0.504	0.488	0.473	0.458	0.443	0.431	0.419	0.408	0.396	0.386	0.377	0.359	0.351
9.5	**0.306**	0.409	0.397	0.386	0.374	0.363	0.354	0.345	0.336	0.327	0.320	0.313	0.299	0.293
10.0	**0.258**	0.340	0.331	0.322	0.313	0.304	0.297	0.290	0.283	0.276	0.270	0.264	0.253	0.248
10.5	**0.221**	0.288	0.281	0.273	0.266	0.259	0.253	0.247	0.241	0.235	0.231	0.226	0.217	0.212
11.0	**0.191**	0.247	0.241	0.235	0.229	0.223	0.218	0.213	0.208	0.203	0.199	0.195	0.187	0.184
11.5	**0.167**	0.214	0.209	0.204	0.199	0.194	0.189	0.185	0.181	0.177	0.173	0.170	0.163	0.160
12.0	**0.146**	0.188	0.183	0.179	0.174	0.170	0.166	0.163	0.159	0.156	0.152	0.149	0.144	0.141
12.5	**0.130**	0.165	0.162	0.158	0.154	0.150	0.147	0.144	0.141	0.138	0.135	0.132	0.127	0.125
13.0	**0.116**	0.147	0.143	0.140	0.137	0.133	0.131	0.128	0.125	0.122	0.120	0.118	0.113	0.111
13.5	**0.104**	0.132	0.129	0.126	0.123	0.120	0.117	0.115	0.113	0.110	0.108	0.106	0.102	0.100
14.0	**0.094**	0.118	0.116	0.113	0.110	0.108	0.106	0.103	0.101	0.099	0.097	0.095	0.092	0.090
14.5	**0.085**	0.107	0.104	0.102	0.100	0.097	0.095	0.093	0.091	0.090	0.088	0.086	0.083	0.082
15.0	**0.077**	0.096	0.094	0.092	0.090	0.088	0.086	0.084	0.083	0.081	0.079	0.078	0.075	0.074
15.5	**0.070**	0.087	0.086	0.084	0.082	0.080	0.078	0.077	0.075	0.074	0.072	0.071	0.069	0.067
16.0	**0.064**	0.080	0.078	0.076	0.075	0.073	0.072	0.070	0.069	0.067	0.066	0.065	0.063	0.062
16.5	**0.059**	0.073	0.072	0.070	0.068	0.067	0.066	0.064	0.063	0.062	0.061	0.060	0.058	0.057
17.0	**0.054**	0.067	0.066	0.064	0.063	0.062	0.060	0.059	0.058	0.057	0.056	0.055	0.053	0.052
17.5	**0.050**	0.062	0.061	0.059	0.058	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.049	0.048
18.0	**0.046**	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.050	0.049	0.048	0.047	0.046	0.045
18.5	**0.043**	0.053	0.052	0.051	0.050	0.049	0.048	0.047	0.046	0.045	0.045	0.044	0.042	0.042
19.0	**0.040**	0.049	0.048	0.047	0.046	0.045	0.044	0.044	0.043	0.042	0.041	0.041	0.039	0.039
19.5	**0.037**	0.046	0.045	0.044	0.043	0.042	0.041	0.041	0.040	0.039	0.039	0.038	0.037	0.036
20.0	**0.035**	0.043	0.042	0.041	0.040	0.039	0.039	0.038	0.037	0.037	0.036	0.035	0.034	0.034
20.5	**0.033**	0.040	0.039	0.038	0.038	0.037	0.036	0.036	0.035	0.034	0.034	0.033	0.032	0.032
21.0	**0.031**	0.038	0.037	0.036	0.035	0.035	0.034	0.033	0.033	0.032	0.032	0.031	0.030	0.030
21.5	**0.029**	0.035	0.035	0.034	0.033	0.033	0.032	0.032	0.031	0.031	0.030	0.030	0.029	0.028
22.0	**0.028**	0.033	0.033	0.032	0.032	0.031	0.030	0.030	0.029	0.029	0.028	0.028	0.027	0.027
22.5	**0.026**	0.032	0.031	0.030	0.030	0.029	0.029	0.028	0.028	0.027	0.027	0.027	0.026	0.025
23.0	**0.025**	0.030	0.029	0.029	0.028	0.028	0.027	0.027	0.026	0.026	0.025	0.025	0.024	0.024
23.5	**0.023**	0.028	0.028	0.027	0.027	0.026	0.026	0.025	0.025	0.024	0.024	0.024	0.023	0.023
24.0	**0.022**	0.027	0.026	0.026	0.025	0.025	0.024	0.024	0.024	0.023	0.023	0.023	0.022	0.022
24.5	**0.021**	0.025	0.025	0.024	0.024	0.023	0.023	0.023	0.022	0.022	0.022	0.021	0.021	0.021
25.0	**0.020**	0.024	0.024	0.023	0.023	0.022	0.022	0.022	0.021	0.021	0.021	0.020	0.020	0.020
25.5	**0.019**	0.023	0.023	0.022	0.022	0.021	0.021	0.021	0.020	0.020	0.020	0.020	0.019	0.019
26.0	**0.018**	0.022	0.021	0.021	0.021	0.020	0.020	0.020	0.019	0.019	0.019	0.019	0.018	0.018
26.5	**0.018**	0.021	0.020	0.020	0.020	0.019	0.019	0.019	0.018	0.018	0.018	0.018	0.017	0.017
27.0	**0.017**	0.019	0.019	0.019	0.019	0.018	0.018	0.018	0.017	0.017	0.017	0.017	0.016	0.016
27.5	**0.015**	0.018	0.018	0.017	0.017	0.017	0.017	0.016	0.016	0.016	0.016	0.015	0.015	0.015
28.0	**0.014**	0.016	0.016	0.016	0.015	0.015	0.015	0.015	0.015	0.014	0.014	0.014	0.014	0.014
28.5	**0.013**	0.015	0.014	0.014	0.014	0.014	0.014	0.013	0.013	0.013	0.013	0.013	0.012	0.012
29.0	**0.012**	0.014	0.014	0.013	0.013	0.013	0.013	0.013	0.012	0.012	0.012	0.012	0.012	0.012
29.5	**0.011**	0.013	0.013	0.013	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.011	0.011
30.0	**0.011**	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.011	0.011	0.011	0.011	0.011

Table 7-23: C_t values, Sound Optimized Mode SO4 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.24 Sound Curves, Sound Optimized Mode SO4 (HWO)

Sound Power Level at Hub Height	
Conditions for Sound Power Level:	**Measurement standard IEC 61400-11 ed. 3** **Maximum turbulence at hub height: 30%** **Inflow angle (vertical): 0 ±2°** **Air density: 1.225 kg/m^3**
Wind speed at hub height [m/s]	**Sound Power Level at Hub Height [dBA]** **Sound Optimized Mode SO4** (not available for hub height 116.5 m in IEC IIA climate) **(Blades with serrated trailing edge)**
3	91.8
4	92.1
5	93.9
6	97.0
7	99.7
8	99.8
9	99.8
10	99.8
11	99.8
12	99.8
13	99.8
14	99.8
15	99.8
16	99.8
17	99.8
18	99.8
19	99.8
20	99.8

Table 7-24: Sound curves, Sound Optimized Mode SO4 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.25 Power Curves, Sound Optimized Mode SO5

Air density [kg/m³]														
Wind speed [m/s]	**1.225**	**0.95**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**22**	10	11	12	12	13	15	16	17	18	19	21	23	24
3.5	**78**	49	52	54	57	60	62	65	67	70	73	75	81	83
4.0	**150**	105	110	114	118	122	126	130	134	138	142	146	154	158
4.5	**236**	172	178	184	190	196	201	207	213	219	225	231	242	248
5.0	**340**	252	260	268	276	284	292	300	308	316	324	332	348	356
5.5	**466**	349	360	370	381	392	402	413	423	434	444	455	476	487
6.0	**617**	467	480	494	508	521	535	549	562	576	590	603	631	644
6.5	**794**	604	622	639	656	674	691	708	725	743	760	777	812	829
7.0	**995**	761	782	804	825	846	868	889	910	931	953	974	1016	1037
7.5	**1209**	929	955	980	1006	1032	1057	1082	1108	1133	1158	1183	1234	1259
8.0	**1450**	1119	1149	1180	1210	1240	1270	1300	1330	1360	1390	1420	1480	1510
8.5	**1721**	1334	1370	1406	1442	1478	1513	1548	1583	1618	1652	1687	1755	1790
9.0	**2010**	1564	1605	1646	1687	1728	1769	1810	1850	1891	1931	1970	2048	2087
9.5	**2290**	1802	1849	1896	1942	1989	2033	2077	2121	2164	2206	2248	2330	2369
10.0	**2546**	2049	2099	2150	2200	2251	2297	2342	2388	2433	2471	2508	2576	2607
10.5	**2749**	2318	2368	2419	2469	2520	2557	2595	2632	2670	2696	2722	2768	2788
11.0	**2898**	2570	2613	2655	2698	2740	2768	2795	2822	2849	2865	2881	2908	2918
11.5	**3001**	2799	2830	2860	2890	2920	2936	2951	2966	2981	2988	2995	3004	3008
12.0	**3070**	2970	2988	3005	3022	3039	3045	3051	3057	3064	3066	3068	3071	3072
12.5	**3113**	3075	3082	3089	3096	3103	3105	3107	3109	3111	3112	3112	3114	3114
13.0	**3136**	3123	3126	3128	3131	3133	3134	3134	3135	3135	3135	3136	3136	3136
13.5	**3146**	3140	3142	3143	3144	3146	3146	3146	3146	3146	3146	3146	3146	3146
14.0	**3159**	3158	3159	3159	3160	3160	3160	3160	3160	3159	3159	3159	3159	3159
14.5	**3169**	3170	3170	3170	3170	3170	3170	3170	3169	3169	3169	3169	3169	3169
15.0	**3176**	3176	3176	3176	3176	3176	3176	3176	3176	3176	3176	3176	3176	3176
15.5	**3180**	3180	3180	3180	3180	3180	3180	3180	3180	3180	3180	3180	3179	3179
16.0	**3183**	3184	3184	3184	3184	3184	3184	3184	3184	3184	3184	3183	3183	3183
16.5	**3190**	3192	3192	3192	3192	3192	3191	3191	3191	3191	3190	3190	3190	3189
17.0	**3200**	3204	3204	3204	3203	3203	3202	3202	3202	3201	3201	3201	3200	3200
17.5	**3213**	3218	3217	3217	3216	3216	3216	3215	3215	3215	3214	3214	3213	3212
18.0	**3226**	3230	3230	3229	3229	3229	3228	3228	3228	3227	3227	3227	3226	3225
18.5	**3237**	3241	3241	3240	3240	3240	3240	3239	3239	3238	3238	3238	3237	3237
19.0	**3246**	3250	3250	3249	3249	3249	3248	3248	3248	3248	3247	3247	3246	3246
19.5	**3255**	3259	3259	3258	3258	3258	3257	3257	3257	3256	3256	3256	3255	3254
20.0	**3265**	3269	3268	3268	3268	3267	3267	3267	3266	3266	3266	3265	3264	3264
20.5	**3274**	3276	3276	3276	3276	3275	3275	3275	3275	3274	3274	3274	3273	3273
21.0	**3279**	3281	3281	3281	3281	3280	3280	3280	3280	3280	3279	3279	3279	3279
21.5	**3282**	3282	3282	3282	3282	3282	3282	3282	3282	3282	3282	3282	3282	3282
22.0	**3283**	3284	3284	3284	3284	3284	3284	3284	3284	3284	3283	3283	3283	3283
22.5	**3284**	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284
23.0	**3284**	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284
23.5	**3284**	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284
24.0	**3284**	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284
24.5	**3284**	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284
25.0	**3284**	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284

Table 7-25: Power curve, Sound Optimized Mode SO5

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.26 Ct Values, Sound Optimized Mode SO5

Air density kg/m³														
Wind speed [m/s]	**1.225**	**0.950**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**0.873**	0.878	0.878	0.877	0.877	0.877	0.876	0.876	0.875	0.875	0.874	0.874	0.873	0.873
3.5	**0.849**	0.853	0.853	0.852	0.852	0.851	0.851	0.851	0.850	0.850	0.850	0.849	0.849	0.848
4.0	**0.827**	0.831	0.831	0.831	0.830	0.830	0.829	0.829	0.829	0.828	0.828	0.827	0.826	0.826
4.5	**0.816**	0.815	0.815	0.815	0.815	0.814	0.814	0.815	0.815	0.815	0.815	0.815	0.816	0.816
5.0	**0.826**	0.825	0.825	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.825	0.825
5.5	**0.826**	0.830	0.830	0.829	0.829	0.829	0.829	0.828	0.828	0.828	0.827	0.827	0.826	0.825
6.0	**0.817**	0.823	0.822	0.822	0.821	0.821	0.820	0.820	0.819	0.819	0.818	0.818	0.817	0.816
6.5	**0.795**	0.801	0.800	0.800	0.799	0.799	0.798	0.798	0.797	0.797	0.796	0.796	0.794	0.794
7.0	**0.761**	0.768	0.767	0.766	0.766	0.765	0.765	0.764	0.764	0.763	0.763	0.762	0.761	0.760
7.5	**0.721**	0.728	0.727	0.727	0.726	0.725	0.725	0.724	0.724	0.723	0.722	0.722	0.721	0.720
8.0	**0.691**	0.698	0.698	0.697	0.696	0.696	0.695	0.694	0.694	0.693	0.692	0.692	0.690	0.689
8.5	**0.667**	0.677	0.676	0.675	0.675	0.674	0.673	0.672	0.672	0.671	0.670	0.668	0.666	0.665
9.0	**0.642**	0.652	0.651	0.650	0.649	0.648	0.647	0.647	0.646	0.645	0.644	0.643	0.640	0.639
9.5	**0.610**	0.626	0.625	0.625	0.624	0.623	0.621	0.619	0.618	0.616	0.614	0.612	0.607	0.604
10.0	**0.569**	0.599	0.598	0.596	0.595	0.593	0.591	0.588	0.585	0.582	0.578	0.573	0.563	0.557
10.5	**0.518**	0.579	0.575	0.572	0.569	0.566	0.560	0.554	0.548	0.541	0.534	0.526	0.510	0.502
11.0	**0.464**	0.550	0.544	0.538	0.532	0.526	0.517	0.509	0.500	0.492	0.483	0.474	0.455	0.446
11.5	**0.411**	0.517	0.508	0.499	0.490	0.481	0.471	0.460	0.450	0.440	0.430	0.421	0.402	0.393
12.0	**0.363**	0.474	0.464	0.453	0.442	0.431	0.421	0.410	0.400	0.390	0.381	0.372	0.355	0.347
12.5	**0.320**	0.425	0.414	0.403	0.392	0.381	0.371	0.362	0.353	0.344	0.336	0.328	0.313	0.307
13.0	**0.283**	0.376	0.366	0.355	0.345	0.335	0.327	0.319	0.311	0.303	0.296	0.290	0.277	0.272
13.5	**0.253**	0.333	0.324	0.315	0.307	0.298	0.291	0.284	0.277	0.270	0.264	0.258	0.248	0.243
14.0	**0.226**	0.296	0.288	0.281	0.273	0.265	0.259	0.253	0.247	0.241	0.236	0.231	0.222	0.217
14.5	**0.203**	0.264	0.258	0.251	0.244	0.238	0.232	0.227	0.222	0.216	0.212	0.208	0.199	0.195
15.0	**0.183**	0.236	0.230	0.224	0.219	0.213	0.208	0.204	0.199	0.194	0.190	0.186	0.179	0.176
15.5	**0.165**	0.213	0.208	0.203	0.197	0.192	0.188	0.184	0.180	0.176	0.172	0.169	0.162	0.159
16.0	**0.150**	0.193	0.188	0.184	0.179	0.175	0.171	0.167	0.163	0.160	0.157	0.154	0.148	0.145
16.5	**0.138**	0.176	0.172	0.167	0.163	0.159	0.156	0.153	0.149	0.146	0.143	0.140	0.135	0.133
17.0	**0.126**	0.161	0.157	0.154	0.150	0.146	0.143	0.140	0.137	0.134	0.131	0.129	0.124	0.122
17.5	**0.117**	0.148	0.145	0.141	0.138	0.135	0.132	0.129	0.126	0.124	0.121	0.119	0.115	0.112
18.0	**0.108**	0.137	0.134	0.130	0.127	0.124	0.122	0.119	0.117	0.114	0.112	0.110	0.106	0.104
18.5	**0.100**	0.126	0.124	0.121	0.118	0.115	0.113	0.111	0.108	0.106	0.104	0.102	0.098	0.097
19.0	**0.093**	0.117	0.114	0.111	0.109	0.106	0.104	0.102	0.100	0.098	0.096	0.094	0.091	0.089
19.5	**0.086**	0.108	0.106	0.104	0.101	0.099	0.097	0.095	0.093	0.091	0.090	0.088	0.085	0.083
20.0	**0.081**	0.101	0.099	0.097	0.094	0.092	0.090	0.089	0.087	0.085	0.084	0.082	0.079	0.078
20.5	**0.076**	0.094	0.092	0.090	0.088	0.086	0.085	0.083	0.081	0.080	0.078	0.077	0.074	0.073
21.0	**0.071**	0.088	0.086	0.084	0.083	0.081	0.079	0.078	0.076	0.075	0.073	0.072	0.070	0.069
21.5	**0.067**	0.083	0.081	0.080	0.078	0.076	0.075	0.073	0.072	0.071	0.069	0.068	0.066	0.065
22.0	**0.063**	0.078	0.076	0.075	0.073	0.072	0.070	0.069	0.068	0.066	0.065	0.064	0.062	0.061
22.5	**0.059**	0.073	0.072	0.070	0.069	0.067	0.066	0.065	0.064	0.062	0.061	0.060	0.058	0.057
23.0	**0.056**	0.069	0.067	0.066	0.064	0.063	0.062	0.061	0.060	0.058	0.057	0.056	0.055	0.054
23.5	**0.052**	0.065	0.063	0.062	0.061	0.059	0.058	0.057	0.056	0.055	0.054	0.053	0.052	0.051
24.0	**0.050**	0.061	0.060	0.059	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.050	0.049	0.048
24.5	**0.047**	0.058	0.056	0.055	0.054	0.053	0.052	0.051	0.050	0.049	0.049	0.048	0.046	0.046
25.0	**0.045**	0.055	0.053	0.052	0.051	0.050	0.049	0.048	0.048	0.047	0.046	0.045	0.044	0.043

Table 7-26: C_t values, Sound Optimized Mode SO5

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

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7.27 Sound Curves, Sound Optimized Mode SO5

Sound Power Level at Hub Height	
Conditions for Sound Power Level:	**Measurement standard IEC 61400-11 ed. 3** **Maximum turbulence at hub height: 30%** **Inflow angle (vertical): 0 ±2°** **Air density: 1.225 kg/m^3**
Wind speed at hub height [m/s]	**Sound Power Level at Hub Height [dBA]** **Sound Optimized Mode SO5** **(Blades with serrated trailing edge)**
3	91.8
4	92.1
5	93.9
6	96.9
7	98.7
8	99.9
9	102.3
10	103.0
11	103.6
12	104.2
13	104.4
14	104.4
15	104.4
16	104.4
17	104.4
18	104.4
19	104.4
20	104.4

Table 7-27: Sound curves, Sound Optimized Mode SO5

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Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.28 Power Curves, Sound Optimized Mode SO5 (HWO)

Air density [kg/m³]														
Wind speed [m/s]	**1.225**	**0.95**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**22**	10	11	12	12	13	15	16	17	18	19	21	23	24
3.5	**78**	49	52	54	57	60	62	65	67	70	73	75	81	83
4.0	**150**	105	110	114	118	122	126	130	134	138	142	146	154	158
4.5	**236**	172	178	184	190	196	201	207	213	219	225	231	242	248
5.0	**340**	252	260	268	276	284	292	300	308	316	324	332	348	356
5.5	**466**	349	360	370	381	392	402	413	423	434	444	455	476	487
6.0	**617**	467	480	494	508	521	535	549	562	576	590	603	631	644
6.5	**794**	604	622	639	656	674	691	708	725	743	760	777	812	829
7.0	**995**	761	782	804	825	846	868	889	910	931	953	974	1016	1037
7.5	**1209**	929	955	980	1006	1032	1057	1082	1108	1133	1158	1184	1234	1259
8.0	**1451**	1119	1149	1180	1210	1240	1270	1300	1330	1360	1390	1420	1480	1510
8.5	**1721**	1335	1370	1406	1442	1478	1513	1548	1583	1618	1652	1687	1755	1790
9.0	**2010**	1564	1605	1646	1687	1728	1769	1810	1850	1891	1931	1970	2049	2087
9.5	**2291**	1802	1849	1896	1942	1989	2033	2077	2121	2164	2206	2248	2330	2369
10.0	**2546**	2049	2099	2150	2200	2251	2297	2342	2388	2433	2471	2508	2576	2607
10.5	**2749**	2318	2368	2419	2469	2520	2557	2595	2632	2670	2696	2723	2769	2788
11.0	**2898**	2570	2613	2655	2698	2740	2768	2795	2822	2849	2865	2881	2908	2918
11.5	**3001**	2799	2830	2860	2890	2921	2936	2951	2966	2981	2988	2995	3005	3008
12.0	**3070**	2970	2988	3005	3022	3039	3045	3051	3057	3064	3066	3068	3071	3072
12.5	**3113**	3075	3082	3089	3096	3103	3105	3107	3109	3111	3112	3112	3114	3114
13.0	**3136**	3123	3126	3128	3131	3133	3134	3134	3135	3135	3135	3136	3136	3136
13.5	**3146**	3140	3142	3143	3145	3146	3146	3146	3146	3147	3146	3146	3146	3146
14.0	**3159**	3158	3159	3159	3160	3160	3160	3160	3160	3159	3159	3159	3159	3159
14.5	**3169**	3170	3170	3170	3170	3170	3170	3170	3169	3169	3169	3169	3169	3169
15.0	**3176**	3176	3176	3176	3176	3176	3176	3176	3176	3176	3176	3176	3176	3176
15.5	**3180**	3180	3180	3180	3180	3180	3180	3180	3180	3180	3180	3180	3179	3179
16.0	**3183**	3185	3184	3184	3184	3184	3184	3184	3184	3184	3184	3183	3183	3183
16.5	**3190**	3192	3192	3192	3192	3192	3191	3191	3191	3191	3190	3190	3190	3189
17.0	**3200**	3204	3204	3204	3203	3203	3202	3202	3202	3201	3201	3201	3200	3200
17.5	**3213**	3218	3217	3217	3217	3216	3216	3215	3215	3215	3214	3214	3213	3212
18.0	**3226**	3230	3230	3229	3229	3229	3228	3228	3228	3227	3227	3227	3226	3225
18.5	**3237**	3241	3241	3241	3240	3240	3240	3239	3239	3239	3238	3238	3237	3237
19.0	**3247**	3250	3250	3249	3249	3249	3248	3248	3248	3248	3247	3247	3246	3246
19.5	**3255**	3259	3259	3258	3258	3258	3257	3257	3257	3257	3256	3256	3255	3254
20.0	**3265**	3269	3268	3268	3268	3267	3267	3267	3266	3266	3266	3265	3264	3264
20.5	**3274**	3277	3276	3276	3276	3275	3275	3275	3275	3274	3274	3274	3273	3273
21.0	**3279**	3281	3281	3281	3281	3281	3280	3280	3280	3280	3279	3279	3279	3279
21.5	**3282**	3283	3283	3283	3283	3283	3282	3282	3282	3282	3282	3282	3282	3282
22.0	**3283**	3284	3284	3284	3284	3284	3284	3284	3284	3284	3283	3283	3283	3283
22.5	**3284**	3283	3283	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284	3284
23.0	**3279**	3263	3264	3266	3268	3270	3272	3273	3274	3276	3277	3278	3279	3280
23.5	**3229**	3184	3188	3193	3197	3201	3205	3209	3213	3218	3221	3225	3232	3235
24.0	**3110**	3035	3041	3048	3054	3061	3068	3075	3082	3089	3096	3103	3116	3122
24.5	**2918**	2823	2831	2840	2848	2857	2865	2874	2882	2891	2900	2909	2927	2935
25.0	**2676**	2585	2593	2601	2609	2618	2625	2633	2641	2649	2658	2667	2685	2694
25.5	**2430**	2347	2354	2362	2369	2376	2384	2391	2399	2406	2414	2422	2437	2445
26.0	**2171**	2101	2106	2112	2117	2123	2131	2138	2146	2154	2159	2165	2178	2186
26.5	**1918**	1856	1862	1868	1874	1880	1885	1890	1894	1899	1906	1912	1923	1929
27.0	**1664**	1614	1619	1624	1628	1633	1638	1642	1646	1650	1655	1659	1669	1674
27.5	**1427**	1379	1383	1387	1391	1396	1399	1403	1407	1411	1417	1422	1430	1434
28.0	**1224**	1191	1195	1199	1203	1207	1209	1211	1214	1216	1219	1221	1228	1232
28.5	**1090**	1077	1078	1079	1080	1081	1082	1084	1085	1086	1087	1088	1091	1093
29.0	**1046**	1043	1043	1043	1044	1044	1044	1044	1044	1045	1045	1045	1046	1047
29.5	**1036**	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1037
30.0	**1035**	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035

Table 7-28: Power curve, Sound Optimized Mode SO5 (High Wind Operation)

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Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.29 Ct Values, Sound Optimized Mode SO5 (HWO)

Air density kg/m³														
Wind speed [m/s]	**1.225**	**0.950**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**0.873**	0.878	0.878	0.877	0.877	0.877	0.876	0.876	0.875	0.875	0.874	0.874	0.873	0.873
3.5	**0.849**	0.853	0.853	0.852	0.852	0.851	0.851	0.851	0.850	0.850	0.850	0.849	0.849	0.848
4.0	**0.827**	0.831	0.831	0.831	0.830	0.830	0.829	0.829	0.829	0.828	0.828	0.827	0.826	0.826
4.5	**0.816**	0.815	0.815	0.815	0.815	0.814	0.814	0.815	0.815	0.815	0.815	0.815	0.816	0.816
5.0	**0.826**	0.825	0.825	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.825	0.825
5.5	**0.826**	0.830	0.830	0.829	0.829	0.829	0.829	0.828	0.828	0.828	0.827	0.827	0.826	0.825
6.0	**0.817**	0.823	0.822	0.822	0.821	0.821	0.820	0.820	0.819	0.819	0.818	0.818	0.817	0.816
6.5	**0.795**	0.801	0.800	0.800	0.799	0.799	0.798	0.798	0.797	0.797	0.796	0.796	0.794	0.794
7.0	**0.761**	0.768	0.767	0.766	0.766	0.765	0.765	0.764	0.764	0.763	0.763	0.762	0.761	0.760
7.5	**0.721**	0.728	0.727	0.727	0.726	0.725	0.725	0.724	0.724	0.723	0.722	0.722	0.721	0.720
8.0	**0.691**	0.698	0.698	0.697	0.696	0.696	0.695	0.694	0.694	0.693	0.692	0.692	0.690	0.689
8.5	**0.667**	0.677	0.676	0.675	0.675	0.674	0.673	0.672	0.672	0.671	0.670	0.668	0.666	0.665
9.0	**0.642**	0.652	0.651	0.650	0.649	0.648	0.647	0.647	0.646	0.645	0.644	0.643	0.640	0.639
9.5	**0.610**	0.626	0.625	0.625	0.624	0.623	0.621	0.619	0.618	0.616	0.614	0.612	0.607	0.604
10.0	**0.569**	0.599	0.598	0.596	0.595	0.593	0.591	0.588	0.585	0.582	0.578	0.573	0.563	0.557
10.5	**0.518**	0.579	0.575	0.572	0.569	0.566	0.560	0.554	0.548	0.541	0.534	0.526	0.510	0.502
11.0	**0.464**	0.550	0.544	0.538	0.532	0.526	0.517	0.509	0.500	0.492	0.483	0.474	0.455	0.446
11.5	**0.411**	0.517	0.508	0.499	0.490	0.481	0.471	0.460	0.450	0.440	0.430	0.421	0.402	0.393
12.0	**0.363**	0.474	0.464	0.453	0.442	0.431	0.421	0.410	0.400	0.390	0.381	0.372	0.355	0.347
12.5	**0.320**	0.425	0.414	0.403	0.392	0.381	0.371	0.362	0.353	0.344	0.336	0.328	0.313	0.307
13.0	**0.283**	0.376	0.366	0.355	0.345	0.335	0.327	0.319	0.311	0.303	0.296	0.290	0.277	0.272
13.5	**0.253**	0.333	0.324	0.315	0.307	0.298	0.291	0.284	0.277	0.270	0.264	0.258	0.248	0.243
14.0	**0.226**	0.296	0.288	0.281	0.273	0.265	0.259	0.253	0.247	0.241	0.236	0.231	0.222	0.217
14.5	**0.203**	0.264	0.258	0.251	0.244	0.238	0.232	0.227	0.222	0.216	0.212	0.208	0.199	0.195
15.0	**0.183**	0.236	0.230	0.224	0.219	0.213	0.208	0.204	0.199	0.194	0.190	0.186	0.179	0.176
15.5	**0.165**	0.213	0.208	0.203	0.197	0.192	0.188	0.184	0.180	0.176	0.172	0.169	0.162	0.159
16.0	**0.150**	0.193	0.188	0.184	0.179	0.175	0.171	0.167	0.163	0.160	0.157	0.154	0.148	0.145
16.5	**0.138**	0.176	0.172	0.167	0.163	0.159	0.156	0.153	0.149	0.146	0.143	0.140	0.135	0.133
17.0	**0.126**	0.161	0.157	0.154	0.150	0.146	0.143	0.140	0.137	0.134	0.131	0.129	0.124	0.122
17.5	**0.117**	0.148	0.145	0.141	0.138	0.135	0.132	0.129	0.126	0.124	0.121	0.119	0.115	0.112
18.0	**0.108**	0.137	0.134	0.130	0.127	0.124	0.122	0.119	0.117	0.114	0.112	0.110	0.106	0.104
18.5	**0.100**	0.126	0.124	0.121	0.118	0.115	0.113	0.111	0.108	0.106	0.104	0.102	0.098	0.097
19.0	**0.093**	0.117	0.114	0.111	0.109	0.106	0.104	0.102	0.100	0.098	0.096	0.094	0.091	0.089
19.5	**0.086**	0.108	0.106	0.104	0.101	0.099	0.097	0.095	0.093	0.091	0.090	0.088	0.085	0.083
20.0	**0.081**	0.101	0.099	0.097	0.094	0.092	0.090	0.089	0.087	0.085	0.084	0.082	0.079	0.078
20.5	**0.076**	0.094	0.092	0.090	0.088	0.086	0.085	0.083	0.081	0.080	0.078	0.077	0.074	0.073
21.0	**0.071**	0.088	0.086	0.084	0.083	0.081	0.079	0.078	0.076	0.075	0.073	0.072	0.070	0.069
21.5	**0.067**	0.083	0.081	0.080	0.078	0.076	0.075	0.073	0.072	0.071	0.069	0.068	0.066	0.065
22.0	**0.063**	0.078	0.076	0.075	0.073	0.072	0.070	0.069	0.068	0.066	0.065	0.064	0.062	0.061
22.5	**0.059**	0.073	0.072	0.070	0.069	0.067	0.066	0.065	0.064	0.062	0.061	0.060	0.058	0.057
23.0	**0.055**	0.068	0.067	0.065	0.064	0.063	0.062	0.060	0.059	0.058	0.057	0.056	0.055	0.054
23.5	**0.052**	0.063	0.061	0.060	0.059	0.058	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.050
24.0	**0.047**	0.056	0.055	0.054	0.053	0.052	0.052	0.051	0.050	0.049	0.048	0.048	0.046	0.046
24.5	**0.042**	0.050	0.049	0.048	0.047	0.046	0.046	0.045	0.044	0.044	0.043	0.042	0.041	0.041
25.0	**0.037**	0.043	0.043	0.042	0.041	0.040	0.040	0.039	0.039	0.038	0.038	0.037	0.036	0.036
25.5	**0.032**	0.038	0.037	0.037	0.036	0.035	0.035	0.034	0.034	0.033	0.033	0.032	0.032	0.031
26.0	**0.027**	0.032	0.032	0.031	0.031	0.030	0.030	0.029	0.029	0.029	0.028	0.028	0.027	0.027
26.5	**0.023**	0.028	0.027	0.027	0.026	0.026	0.025	0.025	0.025	0.024	0.024	0.024	0.023	0.023
27.0	**0.020**	0.023	0.023	0.023	0.022	0.022	0.022	0.021	0.021	0.021	0.020	0.020	0.020	0.020
27.5	**0.017**	0.020	0.019	0.019	0.019	0.018	0.018	0.018	0.018	0.017	0.017	0.017	0.017	0.017
28.0	**0.014**	0.017	0.016	0.016	0.016	0.016	0.015	0.015	0.015	0.015	0.015	0.015	0.014	0.014
28.5	**0.013**	0.015	0.014	0.014	0.014	0.014	0.014	0.013	0.013	0.013	0.013	0.013	0.012	0.012
29.0	**0.012**	0.014	0.014	0.013	0.013	0.013	0.013	0.013	0.012	0.012	0.012	0.012	0.012	0.012
29.5	**0.011**	0.013	0.013	0.013	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.011	0.011
30.0	**0.011**	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.011	0.011	0.011	0.011	0.011

Table 7-29: C_t values, Sound Optimized Mode SO5 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

7.30 Sound Curves, Sound Optimized Mode SO5 (HWO)

Sound Power Level at Hub Height	
Conditions for Sound Power Level:	**Measurement standard IEC 61400-11 ed. 3** **Maximum turbulence at hub height: 30%** **Inflow angle (vertical): 0 ±2°** **Air density: 1.225 kg/m^3**
Wind speed at hub height [m/s]	**Sound Power Level at Hub Height [dBA]** **Sound Optimized Mode SO5** **(Blades with serrated trailing edge)**
3	91.8
4	92.1
5	93.9
6	96.9
7	98.7
8	99.9
9	102.3
10	103.0
11	103.6
12	104.2
13	104.4
14	104.4
15	104.4
16	104.4
17	104.4
18	104.4
19	104.4
20	104.4

Table 7-30: Sound curves, Sound Optimized Mode SO5 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

Original Instruction: T05 0053-3711 VER 06

8 Power Curves, Ct Values and Sound Curves for Load Optimized (LO) Modes

8.1 Power Curves, Load Optimized Mode LO1

Air density [kg/m³]														
Wind speed [m/s]	**1.225**	**0.95**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**22**	9	10	11	12	13	15	16	17	18	19	21	23	24
3.5	**78**	49	52	54	57	59	62	65	67	70	73	75	81	83
4.0	**150**	105	110	114	118	122	126	130	134	138	142	146	154	158
4.5	**237**	173	178	184	190	196	202	208	213	219	225	231	242	248
5.0	**340**	252	260	268	276	284	292	300	308	316	324	332	348	356
5.5	**466**	349	360	370	381	392	402	413	423	434	445	455	476	487
6.0	**617**	467	480	494	508	521	535	549	562	576	590	603	631	645
6.5	**796**	605	622	640	657	675	692	709	727	744	762	779	814	831
7.0	**1006**	768	790	811	833	855	877	898	920	942	963	985	1028	1050
7.5	**1247**	955	982	1008	1035	1062	1088	1115	1142	1168	1195	1221	1274	1300
8.0	**1522**	1169	1201	1233	1266	1298	1330	1362	1394	1427	1458	1490	1554	1586
8.5	**1835**	1413	1452	1491	1529	1568	1606	1645	1683	1722	1759	1797	1873	1911
9.0	**2181**	1685	1731	1777	1822	1868	1913	1958	2003	2048	2092	2137	2225	2270
9.5	**2544**	1979	2032	2085	2137	2190	2241	2293	2344	2395	2445	2494	2590	2637
10.0	**2875**	2290	2348	2406	2464	2522	2575	2629	2682	2735	2782	2828	2914	2954
10.5	**3110**	2598	2656	2713	2771	2829	2874	2919	2965	3010	3043	3076	3134	3159
11.0	**3237**	2862	2910	2959	3007	3055	3086	3118	3150	3182	3200	3218	3248	3260
11.5	**3287**	3072	3105	3137	3170	3203	3219	3235	3251	3267	3273	3280	3290	3293
12.0	**3298**	3203	3220	3237	3254	3271	3277	3282	3288	3293	3295	3296	3299	3299
12.5	**3300**	3266	3272	3279	3286	3293	3294	3296	3297	3299	3299	3300	3300	3300
13.0	**3300**	3289	3291	3293	3296	3298	3299	3299	3300	3300	3300	3300	3300	3300
13.5	**3300**	3293	3294	3296	3298	3299	3300	3300	3300	3300	3300	3300	3300	3300
14.0	**3300**	3298	3298	3299	3299	3300	3300	3300	3300	3300	3300	3300	3300	3300
14.5	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
15.0	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
15.5	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
16.0	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
16.5	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
17.0	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
17.5	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
18.0	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
18.5	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
19.0	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
19.5	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
20.0	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
20.5	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
21.0	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
21.5	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
22.0	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
22.5	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
23.0	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
23.5	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
24.0	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
24.5	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
25.0	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300

Table 8-1: Power curve, Load Optimized Mode LO1

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

VESTAS PROPRIETARY NOTICE

8.2 Ct Values, Load Optimized Mode LO1

Air density kg/m³														
Wind speed [m/s]	**1.225**	**0.950**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**0.873**	0.878	0.878	0.877	0.877	0.877	0.876	0.876	0.875	0.875	0.874	0.874	0.873	0.873
3.5	**0.849**	0.853	0.853	0.852	0.852	0.851	0.851	0.851	0.850	0.850	0.850	0.849	0.849	0.848
4.0	**0.834**	0.839	0.839	0.838	0.838	0.837	0.837	0.837	0.836	0.836	0.836	0.835	0.834	0.834
4.5	**0.828**	0.828	0.827	0.827	0.827	0.827	0.827	0.827	0.828	0.828	0.828	0.828	0.828	0.829
5.0	**0.827**	0.826	0.827	0.827	0.827	0.827	0.827	0.827	0.827	0.828	0.827	0.827	0.827	0.827
5.5	**0.825**	0.829	0.828	0.828	0.828	0.828	0.827	0.827	0.827	0.826	0.826	0.825	0.824	0.824
6.0	**0.820**	0.825	0.824	0.824	0.823	0.823	0.823	0.822	0.821	0.821	0.820	0.820	0.819	0.818
6.5	**0.816**	0.822	0.821	0.821	0.820	0.820	0.819	0.819	0.818	0.818	0.817	0.817	0.815	0.815
7.0	**0.815**	0.823	0.822	0.822	0.821	0.820	0.819	0.819	0.818	0.817	0.817	0.816	0.815	0.814
7.5	**0.804**	0.814	0.813	0.812	0.811	0.811	0.810	0.809	0.808	0.807	0.806	0.805	0.803	0.802
8.0	**0.794**	0.806	0.805	0.804	0.803	0.802	0.801	0.800	0.799	0.798	0.796	0.795	0.793	0.792
8.5	**0.796**	0.810	0.809	0.808	0.807	0.806	0.804	0.803	0.802	0.800	0.799	0.798	0.795	0.794
9.0	**0.797**	0.813	0.811	0.810	0.809	0.807	0.806	0.805	0.803	0.802	0.800	0.798	0.795	0.793
9.5	**0.780**	0.806	0.805	0.803	0.801	0.799	0.797	0.794	0.792	0.790	0.786	0.783	0.775	0.770
10.0	**0.726**	0.780	0.778	0.775	0.772	0.769	0.764	0.758	0.753	0.748	0.741	0.734	0.717	0.708
10.5	**0.641**	0.736	0.730	0.724	0.718	0.712	0.703	0.694	0.685	0.675	0.664	0.653	0.629	0.617
11.0	**0.550**	0.674	0.665	0.655	0.646	0.637	0.625	0.613	0.601	0.589	0.576	0.563	0.537	0.524
11.5	**0.466**	0.607	0.594	0.582	0.569	0.557	0.543	0.530	0.517	0.503	0.491	0.478	0.454	0.443
12.0	**0.397**	0.534	0.520	0.506	0.493	0.479	0.466	0.454	0.441	0.429	0.418	0.408	0.388	0.379
12.5	**0.343**	0.463	0.450	0.437	0.424	0.411	0.401	0.390	0.379	0.369	0.360	0.352	0.335	0.328
13.0	**0.300**	0.401	0.390	0.379	0.368	0.357	0.348	0.339	0.330	0.321	0.314	0.307	0.294	0.287
13.5	**0.266**	0.352	0.343	0.334	0.324	0.315	0.307	0.300	0.292	0.285	0.279	0.272	0.261	0.255
14.0	**0.237**	0.311	0.303	0.295	0.287	0.278	0.272	0.266	0.259	0.253	0.247	0.242	0.232	0.227
14.5	**0.212**	0.276	0.269	0.262	0.255	0.248	0.243	0.237	0.231	0.226	0.221	0.216	0.208	0.204
15.0	**0.190**	0.246	0.240	0.234	0.228	0.221	0.217	0.212	0.207	0.202	0.198	0.194	0.186	0.182
15.5	**0.172**	0.221	0.216	0.210	0.205	0.200	0.195	0.191	0.187	0.182	0.179	0.175	0.168	0.165
16.0	**0.156**	0.200	0.195	0.190	0.186	0.181	0.177	0.173	0.169	0.165	0.162	0.159	0.153	0.150
16.5	**0.142**	0.182	0.177	0.173	0.169	0.165	0.161	0.158	0.154	0.151	0.148	0.145	0.139	0.137
17.0	**0.130**	0.166	0.162	0.158	0.154	0.150	0.147	0.144	0.141	0.138	0.135	0.133	0.128	0.125
17.5	**0.119**	0.152	0.148	0.145	0.141	0.138	0.135	0.132	0.129	0.126	0.124	0.122	0.117	0.115
18.0	**0.110**	0.139	0.136	0.133	0.130	0.127	0.124	0.122	0.119	0.116	0.114	0.112	0.108	0.106
18.5	**0.102**	0.128	0.126	0.123	0.120	0.117	0.115	0.112	0.110	0.108	0.106	0.104	0.100	0.098
19.0	**0.094**	0.118	0.115	0.113	0.110	0.108	0.105	0.103	0.101	0.099	0.097	0.095	0.092	0.090
19.5	**0.087**	0.109	0.107	0.105	0.102	0.100	0.098	0.096	0.094	0.092	0.090	0.089	0.085	0.084
20.0	**0.081**	0.102	0.099	0.097	0.095	0.093	0.091	0.089	0.087	0.086	0.084	0.082	0.080	0.078
20.5	**0.076**	0.095	0.093	0.090	0.088	0.086	0.085	0.083	0.081	0.080	0.078	0.077	0.074	0.073
21.0	**0.071**	0.088	0.086	0.084	0.083	0.081	0.079	0.078	0.076	0.075	0.073	0.072	0.070	0.068
21.5	**0.067**	0.083	0.081	0.080	0.078	0.076	0.075	0.073	0.072	0.070	0.069	0.068	0.066	0.065
22.0	**0.063**	0.078	0.076	0.075	0.073	0.071	0.070	0.069	0.067	0.066	0.065	0.064	0.062	0.061
22.5	**0.059**	0.073	0.072	0.070	0.069	0.067	0.066	0.065	0.063	0.062	0.061	0.060	0.058	0.057
23.0	**0.055**	0.068	0.067	0.066	0.064	0.063	0.062	0.061	0.059	0.058	0.057	0.056	0.054	0.054
23.5	**0.052**	0.064	0.063	0.062	0.061	0.059	0.058	0.057	0.056	0.055	0.054	0.053	0.051	0.051
24.0	**0.049**	0.061	0.060	0.058	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.050	0.049	0.048
24.5	**0.047**	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.050	0.049	0.048	0.048	0.046	0.045
25.0	**0.044**	0.054	0.053	0.052	0.051	0.050	0.049	0.048	0.047	0.047	0.046	0.045	0.044	0.043

Table 8-2: C_t values, Load Optimized Mode LO1

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

8.3 Sound Curves, Load Optimized Mode LO1

Sound Power Level at Hub Height	
Conditions for Sound Power Level:	**Measurement standard IEC 61400-11 ed. 3** **Maximum turbulence at hub height: 30%** **Inflow angle (vertical): 0 ±2°** **Air density: 1.225 kg/m^3**
Wind speed at hub height [m/s]	**Sound Power Level at Hub Height [dBA]** **Load Optimized Mode LO1 (Blades with serrated trailing edge)**
3	91.8
4	92.1
5	93.9
6	97.1
7	100.4
8	103.4
9	105.5
10	105.8
11	105.8
12	105.8
13	105.8
14	105.8
15	105.8
16	105.8
17	105.8
18	105.8
19	105.8
20	105.8

Table 8-3: Sound curves, Load Optimized Mode LO1

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

8.4 Power Curves, Load Optimized Mode LO1 (HWO)

Air density [kg/m³]														
Wind speed [m/s]	**1.225**	**0.95**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**22**	9	10	11	12	13	15	16	17	18	19	21	23	24
3.5	**78**	49	52	54	57	59	62	65	67	70	73	75	81	83
4.0	**150**	105	110	114	118	122	126	130	134	138	142	146	154	158
4.5	**237**	173	178	184	190	196	202	208	213	219	225	231	242	248
5.0	**340**	252	260	268	276	284	292	300	308	316	324	332	348	356
5.5	**466**	349	360	370	381	392	402	413	423	434	445	455	476	487
6.0	**617**	467	480	494	508	521	535	549	562	576	590	603	631	645
6.5	**796**	605	622	640	657	675	692	709	727	744	762	779	814	831
7.0	**1006**	768	790	811	833	855	877	898	920	942	963	985	1028	1050
7.5	**1247**	955	982	1008	1035	1062	1088	1115	1142	1168	1195	1221	1274	1300
8.0	**1522**	1169	1201	1233	1266	1298	1330	1362	1394	1427	1458	1490	1554	1586
8.5	**1835**	1413	1452	1491	1529	1568	1606	1645	1683	1722	1759	1797	1873	1911
9.0	**2181**	1685	1731	1777	1822	1868	1913	1958	2003	2048	2092	2137	2225	2270
9.5	**2544**	1979	2032	2085	2137	2190	2241	2293	2344	2395	2445	2494	2590	2637
10.0	**2875**	2290	2348	2406	2464	2522	2575	2629	2682	2735	2782	2828	2914	2954
10.5	**3110**	2598	2656	2713	2771	2829	2874	2919	2965	3010	3043	3076	3134	3159
11.0	**3237**	2862	2910	2959	3007	3055	3086	3118	3150	3182	3200	3218	3248	3260
11.5	**3287**	3072	3105	3137	3170	3203	3219	3235	3251	3267	3273	3280	3290	3293
12.0	**3298**	3203	3220	3237	3254	3271	3277	3282	3288	3293	3295	3296	3299	3299
12.5	**3300**	3266	3272	3279	3286	3293	3294	3296	3297	3299	3299	3300	3300	3300
13.0	**3300**	3289	3291	3293	3296	3298	3299	3299	3300	3300	3300	3300	3300	3300
13.5	**3300**	3293	3294	3296	3298	3299	3300	3300	3300	3300	3300	3300	3300	3300
14.0	**3300**	3298	3298	3299	3299	3300	3300	3300	3300	3300	3300	3300	3300	3300
14.5	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
15.0	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
15.5	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
16.0	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
16.5	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
17.0	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
17.5	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
18.0	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
18.5	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
19.0	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
19.5	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
20.0	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
20.5	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
21.0	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
21.5	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
22.0	**3300**	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
22.5	**3300**	3299	3299	3299	3299	3300	3300	3300	3300	3300	3300	3300	3300	3300
23.0	**3292**	3275	3277	3279	3281	3283	3284	3286	3287	3289	3290	3291	3293	3294
23.5	**3238**	3192	3196	3201	3206	3210	3214	3219	3223	3227	3230	3234	3241	3244
24.0	**3113**	3039	3045	3052	3059	3065	3072	3079	3086	3093	3100	3107	3120	3126
24.5	**2918**	2823	2832	2841	2849	2858	2867	2875	2883	2892	2900	2909	2927	2935
25.0	**2675**	2585	2593	2601	2609	2617	2625	2634	2642	2650	2658	2667	2685	2694
25.5	**2430**	2347	2354	2362	2369	2376	2384	2391	2399	2406	2414	2422	2438	2445
26.0	**2171**	2101	2106	2112	2117	2123	2131	2138	2146	2154	2159	2165	2178	2186
26.5	**1918**	1856	1862	1868	1874	1880	1885	1890	1894	1899	1906	1912	1923	1929
27.0	**1664**	1614	1619	1624	1628	1633	1638	1642	1646	1650	1655	1659	1669	1674
27.5	**1427**	1379	1383	1387	1391	1396	1399	1403	1407	1411	1417	1422	1430	1434
28.0	**1224**	1191	1195	1199	1203	1207	1209	1211	1214	1216	1219	1221	1228	1232
28.5	**1090**	1077	1078	1079	1080	1081	1082	1084	1085	1086	1087	1088	1091	1093
29.0	**1046**	1043	1043	1043	1044	1044	1044	1044	1044	1045	1045	1045	1046	1047
29.5	**1036**	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1037
30.0	**1035**	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035

Table 8-4: Power curve, Load Optimized Mode LO1 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

8.5 Ct Values, Load Optimized Mode LO1 (HWO)

Air density kg/m³														
Wind speed [m/s]	**1.225**	**0.950**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**0.873**	0.878	0.878	0.877	0.877	0.877	0.876	0.876	0.875	0.875	0.874	0.874	0.873	0.873
3.5	**0.849**	0.853	0.853	0.852	0.852	0.851	0.851	0.851	0.850	0.850	0.850	0.849	0.849	0.848
4.0	**0.834**	0.839	0.839	0.838	0.838	0.837	0.837	0.837	0.836	0.836	0.836	0.835	0.834	0.834
4.5	**0.828**	0.828	0.827	0.827	0.827	0.827	0.827	0.827	0.828	0.828	0.828	0.828	0.828	0.829
5.0	**0.827**	0.826	0.827	0.827	0.827	0.827	0.827	0.827	0.827	0.828	0.827	0.827	0.827	0.827
5.5	**0.825**	0.829	0.828	0.828	0.828	0.828	0.827	0.827	0.827	0.826	0.826	0.825	0.824	0.824
6.0	**0.820**	0.825	0.824	0.824	0.823	0.823	0.823	0.822	0.821	0.821	0.820	0.820	0.819	0.818
6.5	**0.816**	0.822	0.821	0.821	0.820	0.820	0.819	0.819	0.818	0.818	0.817	0.817	0.815	0.815
7.0	**0.815**	0.823	0.822	0.822	0.821	0.820	0.819	0.819	0.818	0.817	0.817	0.816	0.815	0.814
7.5	**0.804**	0.814	0.813	0.812	0.811	0.811	0.810	0.809	0.808	0.807	0.806	0.805	0.803	0.802
8.0	**0.794**	0.806	0.805	0.804	0.803	0.802	0.801	0.800	0.799	0.798	0.796	0.795	0.793	0.792
8.5	**0.796**	0.810	0.809	0.808	0.807	0.806	0.804	0.803	0.802	0.800	0.799	0.798	0.795	0.794
9.0	**0.797**	0.813	0.811	0.810	0.809	0.807	0.806	0.805	0.803	0.802	0.800	0.798	0.795	0.793
9.5	**0.780**	0.806	0.805	0.803	0.801	0.799	0.797	0.794	0.792	0.790	0.786	0.783	0.775	0.770
10.0	**0.726**	0.780	0.778	0.775	0.772	0.769	0.764	0.758	0.753	0.748	0.741	0.734	0.717	0.708
10.5	**0.641**	0.736	0.730	0.724	0.718	0.712	0.703	0.694	0.685	0.675	0.664	0.653	0.629	0.617
11.0	**0.550**	0.674	0.665	0.655	0.646	0.637	0.625	0.613	0.601	0.589	0.576	0.563	0.537	0.524
11.5	**0.466**	0.607	0.594	0.582	0.569	0.557	0.543	0.530	0.517	0.503	0.491	0.478	0.454	0.443
12.0	**0.397**	0.534	0.520	0.506	0.493	0.479	0.466	0.454	0.441	0.429	0.418	0.408	0.388	0.379
12.5	**0.343**	0.463	0.450	0.437	0.424	0.411	0.401	0.390	0.379	0.369	0.360	0.352	0.335	0.328
13.0	**0.300**	0.401	0.390	0.379	0.368	0.357	0.348	0.339	0.330	0.321	0.314	0.307	0.294	0.287
13.5	**0.266**	0.352	0.343	0.334	0.324	0.315	0.307	0.300	0.292	0.285	0.279	0.272	0.261	0.255
14.0	**0.237**	0.311	0.303	0.295	0.287	0.278	0.272	0.266	0.259	0.253	0.247	0.242	0.232	0.227
14.5	**0.212**	0.276	0.269	0.262	0.255	0.248	0.243	0.237	0.231	0.226	0.221	0.216	0.208	0.204
15.0	**0.190**	0.246	0.240	0.234	0.228	0.221	0.217	0.212	0.207	0.202	0.198	0.194	0.186	0.182
15.5	**0.172**	0.221	0.216	0.210	0.205	0.200	0.195	0.191	0.187	0.182	0.179	0.175	0.168	0.165
16.0	**0.156**	0.200	0.195	0.190	0.186	0.181	0.177	0.173	0.169	0.165	0.162	0.159	0.153	0.150
16.5	**0.142**	0.182	0.177	0.173	0.169	0.165	0.161	0.158	0.154	0.151	0.148	0.145	0.139	0.137
17.0	**0.130**	0.166	0.162	0.158	0.154	0.150	0.147	0.144	0.141	0.138	0.135	0.133	0.128	0.125
17.5	**0.119**	0.152	0.148	0.145	0.141	0.138	0.135	0.132	0.129	0.126	0.124	0.122	0.117	0.115
18.0	**0.110**	0.139	0.136	0.133	0.130	0.127	0.124	0.122	0.119	0.116	0.114	0.112	0.108	0.106
18.5	**0.102**	0.128	0.126	0.123	0.120	0.117	0.115	0.112	0.110	0.108	0.106	0.104	0.100	0.098
19.0	**0.094**	0.118	0.115	0.113	0.110	0.108	0.105	0.103	0.101	0.099	0.097	0.095	0.092	0.090
19.5	**0.087**	0.109	0.107	0.105	0.102	0.100	0.098	0.096	0.094	0.092	0.090	0.089	0.085	0.084
20.0	**0.081**	0.102	0.099	0.097	0.095	0.093	0.091	0.089	0.087	0.086	0.084	0.082	0.080	0.078
20.5	**0.076**	0.095	0.093	0.090	0.088	0.086	0.085	0.083	0.081	0.080	0.078	0.077	0.074	0.073
21.0	**0.071**	0.088	0.086	0.084	0.083	0.081	0.079	0.078	0.076	0.075	0.073	0.072	0.070	0.068
21.5	**0.067**	0.083	0.081	0.080	0.078	0.076	0.075	0.073	0.072	0.070	0.069	0.068	0.066	0.065
22.0	**0.063**	0.078	0.076	0.075	0.073	0.071	0.070	0.069	0.067	0.066	0.065	0.064	0.062	0.061
22.5	**0.059**	0.073	0.072	0.070	0.069	0.067	0.066	0.065	0.063	0.062	0.061	0.060	0.058	0.057
23.0	**0.055**	0.068	0.067	0.065	0.064	0.063	0.061	0.060	0.059	0.058	0.057	0.056	0.054	0.053
23.5	**0.051**	0.063	0.061	0.060	0.059	0.058	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.050
24.0	**0.047**	0.056	0.055	0.054	0.053	0.052	0.051	0.051	0.050	0.049	0.048	0.048	0.046	0.046
24.5	**0.042**	0.050	0.049	0.048	0.047	0.046	0.046	0.045	0.044	0.044	0.043	0.042	0.041	0.041
25.0	**0.037**	0.043	0.043	0.042	0.041	0.040	0.040	0.039	0.039	0.038	0.038	0.037	0.036	0.036
25.5	**0.032**	0.038	0.037	0.037	0.036	0.035	0.035	0.034	0.034	0.033	0.033	0.032	0.032	0.031
26.0	**0.027**	0.032	0.032	0.031	0.031	0.030	0.030	0.029	0.029	0.029	0.028	0.028	0.027	0.027
26.5	**0.023**	0.028	0.027	0.027	0.026	0.026	0.025	0.025	0.025	0.024	0.024	0.024	0.023	0.023
27.0	**0.020**	0.023	0.023	0.023	0.022	0.022	0.022	0.021	0.021	0.021	0.020	0.020	0.020	0.020
27.5	**0.017**	0.020	0.019	0.019	0.019	0.018	0.018	0.018	0.018	0.017	0.017	0.017	0.017	0.017
28.0	**0.014**	0.017	0.016	0.016	0.016	0.016	0.015	0.015	0.015	0.015	0.015	0.015	0.014	0.014
28.5	**0.013**	0.015	0.014	0.014	0.014	0.014	0.014	0.013	0.013	0.013	0.013	0.013	0.012	0.012
29.0	**0.012**	0.014	0.014	0.013	0.013	0.013	0.013	0.013	0.012	0.012	0.012	0.012	0.012	0.012
29.5	**0.011**	0.013	0.013	0.013	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.011	0.011
30.0	**0.011**	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.011	0.011	0.011	0.011	0.011

Table 8-5: C_t values, Load Optimized Mode LO1 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

8.6 Sound Curves, Load Optimized Mode LO1 (HWO)

Sound Power Level at Hub Height	
Conditions for Sound Power Level:	**Measurement standard IEC 61400-11 ed. 3** **Maximum turbulence at hub height: 30%** **Inflow angle (vertical): 0 ±2°** **Air density: 1.225 kg/m^3**
Wind speed at hub height [m/s]	**Sound Power Level at Hub Height [dBA]** **Load Optimized Mode LO1 (Blades with serrated trailing edge)**
3	91.8
4	92.1
5	93.9
6	97.1
7	100.4
8	103.4
9	105.5
10	105.8
11	105.8
12	105.8
13	105.8
14	105.8
15	105.8
16	105.8
17	105.8
18	105.8
19	105.8
20	105.8

Table 8-6: Sound curves, Load Optimized Mode LO1 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

8.7 Power Curves, Load Optimized Mode LO2

Air density [kg/m³]														
Wind speed [m/s]	**1.225**	**0.95**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**22**	9	10	11	12	13	15	16	17	18	19	21	23	24
3.5	**78**	49	52	54	57	59	62	65	67	70	73	75	81	83
4.0	**150**	105	110	114	118	122	126	130	134	138	142	146	154	158
4.5	**237**	173	178	184	190	196	202	208	213	219	225	231	242	248
5.0	**340**	252	260	268	276	284	292	300	308	316	324	332	348	356
5.5	**466**	349	360	370	381	392	402	413	423	434	445	455	476	487
6.0	**617**	467	480	494	508	521	535	549	562	576	590	603	631	645
6.5	**796**	605	622	640	657	675	692	709	727	744	762	779	814	831
7.0	**1006**	768	790	811	833	855	877	898	920	942	963	985	1028	1050
7.5	**1247**	955	982	1008	1035	1062	1088	1115	1142	1168	1195	1221	1274	1300
8.0	**1522**	1169	1201	1233	1266	1298	1330	1362	1394	1427	1458	1490	1554	1586
8.5	**1835**	1413	1452	1491	1529	1568	1606	1645	1683	1722	1759	1797	1873	1911
9.0	**2181**	1685	1731	1777	1822	1868	1913	1958	2003	2048	2092	2136	2225	2268
9.5	**2524**	1979	2032	2084	2137	2189	2239	2289	2338	2388	2433	2479	2564	2604
10.0	**2789**	2287	2342	2397	2452	2507	2552	2596	2641	2686	2720	2754	2815	2842
10.5	**2933**	2575	2620	2666	2712	2758	2788	2819	2849	2879	2897	2915	2943	2954
11.0	**2988**	2784	2815	2846	2878	2909	2924	2939	2954	2969	2975	2982	2991	2994
11.5	**2999**	2917	2932	2947	2962	2977	2982	2986	2991	2995	2996	2998	2999	3000
12.0	**3000**	2976	2981	2986	2991	2996	2997	2998	2999	3000	3000	3000	3000	3000
12.5	**3000**	2993	2995	2996	2998	2999	3000	3000	3000	3000	3000	3000	3000	3000
13.0	**3000**	2999	2999	2999	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
13.5	**3000**	2999	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
14.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
14.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
15.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
15.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
16.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
16.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
17.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
17.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
18.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
18.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
19.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
19.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
20.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
20.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
21.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
21.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
22.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
22.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
23.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
23.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
24.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
24.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
25.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000

Table 8-7: Power curve, Load Optimized Mode LO2

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

8.8 Ct Values, Load Optimized Mode LO2

Air density kg/m³														
Wind speed [m/s]	**1.225**	**0.950**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**0.873**	0.878	0.878	0.877	0.877	0.877	0.876	0.876	0.875	0.875	0.874	0.874	0.873	0.873
3.5	**0.849**	0.853	0.853	0.852	0.852	0.851	0.851	0.851	0.850	0.850	0.850	0.849	0.849	0.848
4.0	**0.834**	0.839	0.839	0.838	0.838	0.837	0.837	0.837	0.836	0.836	0.836	0.835	0.834	0.834
4.5	**0.828**	0.828	0.828	0.827	0.827	0.827	0.827	0.827	0.828	0.828	0.828	0.828	0.828	0.829
5.0	**0.827**	0.826	0.827	0.827	0.827	0.827	0.827	0.827	0.827	0.828	0.827	0.827	0.827	0.827
5.5	**0.825**	0.829	0.828	0.828	0.828	0.828	0.827	0.827	0.827	0.826	0.826	0.825	0.824	0.824
6.0	**0.820**	0.825	0.824	0.824	0.823	0.823	0.823	0.822	0.821	0.821	0.820	0.820	0.819	0.818
6.5	**0.816**	0.822	0.821	0.821	0.820	0.820	0.819	0.819	0.818	0.818	0.817	0.817	0.815	0.815
7.0	**0.815**	0.823	0.822	0.822	0.821	0.820	0.819	0.819	0.818	0.817	0.817	0.816	0.815	0.814
7.5	**0.804**	0.814	0.813	0.812	0.811	0.811	0.810	0.809	0.808	0.807	0.806	0.805	0.803	0.802
8.0	**0.794**	0.806	0.805	0.804	0.803	0.802	0.801	0.800	0.799	0.798	0.796	0.795	0.793	0.792
8.5	**0.796**	0.810	0.809	0.808	0.807	0.806	0.804	0.803	0.802	0.800	0.799	0.798	0.795	0.794
9.0	**0.796**	0.813	0.811	0.810	0.809	0.807	0.806	0.805	0.803	0.802	0.800	0.798	0.794	0.792
9.5	**0.768**	0.806	0.804	0.803	0.801	0.799	0.795	0.792	0.788	0.785	0.779	0.773	0.760	0.752
10.0	**0.692**	0.779	0.774	0.770	0.765	0.760	0.752	0.743	0.734	0.726	0.714	0.703	0.679	0.666
10.5	**0.587**	0.725	0.715	0.705	0.695	0.685	0.671	0.658	0.644	0.631	0.616	0.602	0.573	0.559
11.0	**0.492**	0.647	0.633	0.620	0.606	0.593	0.578	0.563	0.548	0.533	0.519	0.506	0.480	0.467
11.5	**0.414**	0.564	0.548	0.533	0.518	0.502	0.489	0.475	0.461	0.448	0.436	0.425	0.404	0.394
12.0	**0.355**	0.483	0.468	0.454	0.440	0.426	0.415	0.404	0.393	0.382	0.373	0.364	0.347	0.339
12.5	**0.308**	0.413	0.402	0.390	0.378	0.367	0.357	0.348	0.339	0.330	0.323	0.315	0.302	0.295
13.0	**0.271**	0.358	0.348	0.339	0.329	0.319	0.312	0.304	0.297	0.289	0.283	0.277	0.265	0.260
13.5	**0.241**	0.316	0.308	0.300	0.291	0.283	0.277	0.270	0.264	0.257	0.252	0.246	0.236	0.231
14.0	**0.215**	0.280	0.272	0.265	0.258	0.251	0.246	0.240	0.234	0.229	0.224	0.219	0.210	0.206
14.5	**0.192**	0.249	0.243	0.237	0.231	0.224	0.220	0.215	0.210	0.205	0.201	0.197	0.189	0.185
15.0	**0.173**	0.222	0.217	0.211	0.206	0.201	0.196	0.192	0.188	0.183	0.180	0.176	0.169	0.166
15.5	**0.156**	0.200	0.196	0.191	0.186	0.181	0.177	0.174	0.170	0.166	0.163	0.160	0.153	0.151
16.0	**0.142**	0.181	0.177	0.173	0.169	0.164	0.161	0.158	0.154	0.151	0.148	0.145	0.139	0.137
16.5	**0.130**	0.165	0.161	0.157	0.154	0.150	0.147	0.144	0.141	0.137	0.135	0.132	0.127	0.125
17.0	**0.119**	0.151	0.147	0.144	0.140	0.137	0.134	0.131	0.129	0.126	0.123	0.121	0.117	0.115
17.5	**0.109**	0.138	0.135	0.132	0.129	0.126	0.123	0.121	0.118	0.116	0.113	0.111	0.107	0.105
18.0	**0.101**	0.127	0.124	0.121	0.119	0.116	0.113	0.111	0.109	0.107	0.105	0.103	0.099	0.097
18.5	**0.093**	0.117	0.115	0.112	0.109	0.107	0.105	0.103	0.101	0.098	0.097	0.095	0.092	0.090
19.0	**0.086**	0.108	0.105	0.103	0.101	0.098	0.096	0.095	0.093	0.091	0.089	0.087	0.084	0.083
19.5	**0.080**	0.100	0.098	0.096	0.093	0.091	0.090	0.088	0.086	0.084	0.083	0.081	0.078	0.077
20.0	**0.074**	0.093	0.091	0.089	0.087	0.085	0.083	0.082	0.080	0.078	0.077	0.076	0.073	0.072
20.5	**0.069**	0.087	0.085	0.083	0.081	0.079	0.078	0.076	0.075	0.073	0.072	0.071	0.068	0.067
21.0	**0.065**	0.081	0.079	0.077	0.076	0.074	0.073	0.071	0.070	0.069	0.067	0.066	0.064	0.063
21.5	**0.062**	0.076	0.075	0.073	0.072	0.070	0.069	0.067	0.066	0.065	0.064	0.063	0.061	0.060
22.0	**0.058**	0.071	0.070	0.069	0.067	0.066	0.064	0.063	0.062	0.061	0.060	0.059	0.057	0.056
22.5	**0.054**	0.067	0.066	0.064	0.063	0.062	0.061	0.059	0.058	0.057	0.056	0.055	0.054	0.053
23.0	**0.051**	0.063	0.062	0.060	0.059	0.058	0.057	0.056	0.055	0.054	0.053	0.052	0.050	0.049
23.5	**0.048**	0.059	0.058	0.057	0.056	0.055	0.054	0.053	0.052	0.051	0.050	0.049	0.047	0.047
24.0	**0.046**	0.056	0.055	0.054	0.053	0.052	0.051	0.050	0.049	0.048	0.047	0.046	0.045	0.044
24.5	**0.043**	0.053	0.052	0.051	0.050	0.049	0.048	0.047	0.046	0.045	0.045	0.044	0.043	0.042
25.0	**0.041**	0.050	0.049	0.048	0.047	0.046	0.045	0.045	0.044	0.043	0.042	0.042	0.040	0.040

Table 8-8: C_t values, Load Optimized Mode LO2

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

8.9 Sound Curves, Load Optimized Mode LO2

Sound Power Level at Hub Height	
Conditions for Sound Power Level:	**Measurement standard IEC 61400-11 ed. 3** **Maximum turbulence at hub height: 30%** **Inflow angle (vertical): 0 ±2°** **Air density: 1.225 kg/m^3**
Wind speed at hub height [m/s]	**Sound Power Level at Hub Height [dBA]** **Load Optimized Mode LO2 (Blades with serrated trailing edge)**
3	91.8
4	92.1
5	93.9
6	97.1
7	100.4
8	103.4
9	105.5
10	105.8
11	105.8
12	105.8
13	105.8
14	105.8
15	105.8
16	105.8
17	105.8
18	105.8
19	105.8
20	105.8

Table 8-9: Sound curves, Load Optimized Mode LO2

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

8.10 Power Curves, Load Optimized Mode LO2 (HWO)

Air density [kg/m³]														
Wind speed [m/s]	**1.225**	**0.95**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**22**	9	10	11	12	13	15	16	17	18	19	21	23	24
3.5	**78**	49	52	54	57	59	62	65	67	70	73	75	81	83
4.0	**150**	105	110	114	118	122	126	130	134	138	142	146	154	158
4.5	**237**	173	178	184	190	196	202	208	213	219	225	231	242	248
5.0	**340**	252	260	268	276	284	292	300	308	316	324	332	348	356
5.5	**466**	349	360	370	381	392	402	413	423	434	445	455	476	487
6.0	**617**	467	480	494	508	521	535	549	562	576	590	603	631	645
6.5	**796**	605	622	640	657	675	692	709	727	744	762	779	814	831
7.0	**1006**	768	790	811	833	855	877	898	920	942	963	985	1028	1050
7.5	**1247**	955	982	1008	1035	1062	1088	1115	1142	1168	1195	1221	1274	1300
8.0	**1522**	1169	1201	1233	1266	1298	1330	1362	1394	1427	1458	1490	1554	1586
8.5	**1835**	1413	1452	1491	1529	1568	1606	1645	1683	1722	1759	1797	1873	1911
9.0	**2181**	1685	1731	1777	1822	1868	1913	1958	2003	2048	2092	2136	2225	2268
9.5	**2524**	1979	2032	2084	2137	2189	2239	2289	2338	2388	2433	2479	2564	2604
10.0	**2789**	2287	2342	2397	2452	2507	2552	2596	2641	2686	2720	2754	2815	2842
10.5	**2933**	2575	2620	2666	2712	2758	2788	2819	2849	2879	2897	2915	2943	2954
11.0	**2988**	2784	2815	2846	2878	2909	2924	2939	2954	2969	2975	2982	2991	2994
11.5	**2999**	2917	2932	2947	2962	2977	2982	2986	2991	2995	2996	2998	2999	3000
12.0	**3000**	2976	2981	2986	2991	2996	2997	2998	2999	3000	3000	3000	3000	3000
12.5	**3000**	2993	2995	2996	2998	2999	3000	3000	3000	3000	3000	3000	3000	3000
13.0	**3000**	2999	2999	2999	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
13.5	**3000**	2999	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
14.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
14.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
15.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
15.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
16.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
16.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
17.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
17.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
18.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
18.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
19.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
19.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
20.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
20.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
21.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
21.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
22.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
22.5	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
23.0	**3000**	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
23.5	**2996**	2985	2986	2987	2989	2990	2991	2992	2993	2994	2994	2995	2996	2997
24.0	**2955**	2917	2921	2925	2928	2932	2935	2939	2942	2945	2948	2951	2957	2960
24.5	**2844**	2776	2783	2789	2796	2802	2808	2814	2820	2826	2832	2838	2850	2855
25.0	**2658**	2578	2585	2592	2599	2606	2613	2621	2628	2636	2643	2650	2666	2674
25.5	**2426**	2346	2353	2360	2367	2374	2381	2389	2396	2403	2411	2418	2433	2441
26.0	**2171**	2101	2106	2112	2117	2123	2131	2138	2146	2154	2159	2165	2178	2186
26.5	**1918**	1856	1862	1868	1874	1880	1885	1890	1894	1899	1906	1912	1923	1929
27.0	**1664**	1614	1619	1624	1628	1633	1638	1642	1646	1650	1655	1659	1669	1674
27.5	**1427**	1379	1383	1387	1391	1396	1399	1403	1407	1411	1417	1422	1430	1434
28.0	**1224**	1191	1195	1199	1203	1207	1209	1211	1214	1216	1219	1221	1228	1232
28.5	**1090**	1077	1078	1079	1080	1081	1082	1084	1085	1086	1087	1088	1091	1093
29.0	**1046**	1043	1043	1043	1044	1044	1044	1044	1044	1045	1045	1045	1046	1047
29.5	**1036**	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1036	1037
30.0	**1035**	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035

Table 8-10: Power curve, Load Optimized Mode LO2 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

8.11 Ct Values, Load Optimized Mode LO2 (HWO)

Air density kg/m³														
Wind speed [m/s]	**1.225**	**0.950**	**0.975**	**1.0**	**1.025**	**1.05**	**1.075**	**1.1**	**1.125**	**1.15**	**1.175**	**1.2**	**1.25**	**1.275**
3.0	**0.873**	0.878	0.878	0.877	0.877	0.877	0.876	0.876	0.875	0.875	0.874	0.874	0.873	0.873
3.5	**0.849**	0.853	0.853	0.852	0.852	0.851	0.851	0.851	0.850	0.850	0.850	0.849	0.849	0.848
4.0	**0.834**	0.839	0.839	0.838	0.838	0.837	0.837	0.837	0.836	0.836	0.836	0.835	0.834	0.834
4.5	**0.828**	0.828	0.828	0.827	0.827	0.827	0.827	0.827	0.828	0.828	0.828	0.828	0.828	0.829
5.0	**0.827**	0.826	0.827	0.827	0.827	0.827	0.827	0.827	0.827	0.828	0.827	0.827	0.827	0.827
5.5	**0.825**	0.829	0.828	0.828	0.828	0.828	0.827	0.827	0.827	0.826	0.826	0.825	0.824	0.824
6.0	**0.820**	0.825	0.824	0.824	0.823	0.823	0.823	0.822	0.821	0.821	0.820	0.820	0.819	0.818
6.5	**0.816**	0.822	0.821	0.821	0.820	0.820	0.819	0.819	0.818	0.818	0.817	0.817	0.815	0.815
7.0	**0.815**	0.823	0.822	0.822	0.821	0.820	0.819	0.819	0.818	0.817	0.817	0.816	0.815	0.814
7.5	**0.804**	0.814	0.813	0.812	0.811	0.811	0.810	0.809	0.808	0.807	0.806	0.805	0.803	0.802
8.0	**0.794**	0.806	0.805	0.804	0.803	0.802	0.801	0.800	0.799	0.798	0.796	0.795	0.793	0.792
8.5	**0.796**	0.810	0.809	0.808	0.807	0.806	0.804	0.803	0.802	0.800	0.799	0.798	0.795	0.794
9.0	**0.796**	0.813	0.811	0.810	0.809	0.807	0.806	0.805	0.803	0.802	0.800	0.798	0.794	0.792
9.5	**0.768**	0.806	0.804	0.803	0.801	0.799	0.795	0.792	0.788	0.785	0.779	0.773	0.760	0.752
10.0	**0.692**	0.779	0.774	0.770	0.765	0.760	0.752	0.743	0.734	0.726	0.714	0.703	0.679	0.666
10.5	**0.587**	0.725	0.715	0.705	0.695	0.685	0.671	0.658	0.644	0.631	0.616	0.602	0.573	0.559
11.0	**0.492**	0.647	0.633	0.620	0.606	0.593	0.578	0.563	0.548	0.533	0.519	0.506	0.480	0.467
11.5	**0.414**	0.564	0.548	0.533	0.518	0.502	0.489	0.475	0.461	0.448	0.436	0.425	0.404	0.394
12.0	**0.355**	0.483	0.468	0.454	0.440	0.426	0.415	0.404	0.393	0.382	0.373	0.364	0.347	0.339
12.5	**0.308**	0.413	0.402	0.390	0.378	0.367	0.357	0.348	0.339	0.330	0.323	0.315	0.302	0.295
13.0	**0.271**	0.358	0.348	0.339	0.329	0.319	0.312	0.304	0.297	0.289	0.283	0.277	0.265	0.260
13.5	**0.241**	0.316	0.308	0.300	0.291	0.283	0.277	0.270	0.264	0.257	0.252	0.246	0.236	0.231
14.0	**0.215**	0.280	0.272	0.265	0.258	0.251	0.246	0.240	0.234	0.229	0.224	0.219	0.210	0.206
14.5	**0.192**	0.249	0.243	0.237	0.231	0.224	0.220	0.215	0.210	0.205	0.201	0.197	0.189	0.185
15.0	**0.173**	0.222	0.217	0.211	0.206	0.201	0.196	0.192	0.188	0.183	0.180	0.176	0.169	0.166
15.5	**0.156**	0.200	0.196	0.191	0.186	0.181	0.177	0.174	0.170	0.166	0.163	0.160	0.153	0.151
16.0	**0.142**	0.181	0.177	0.173	0.169	0.164	0.161	0.158	0.154	0.151	0.148	0.145	0.139	0.137
16.5	**0.130**	0.165	0.161	0.157	0.154	0.150	0.147	0.144	0.141	0.137	0.135	0.132	0.127	0.125
17.0	**0.119**	0.151	0.147	0.144	0.140	0.137	0.134	0.131	0.129	0.126	0.123	0.121	0.117	0.115
17.5	**0.109**	0.138	0.135	0.132	0.129	0.126	0.123	0.121	0.118	0.116	0.113	0.111	0.107	0.105
18.0	**0.101**	0.127	0.124	0.121	0.119	0.116	0.113	0.111	0.109	0.107	0.105	0.103	0.099	0.097
18.5	**0.093**	0.117	0.115	0.112	0.109	0.107	0.105	0.103	0.101	0.098	0.097	0.095	0.092	0.090
19.0	**0.086**	0.108	0.105	0.103	0.101	0.098	0.096	0.095	0.093	0.091	0.089	0.087	0.084	0.083
19.5	**0.080**	0.100	0.098	0.096	0.093	0.091	0.090	0.088	0.086	0.084	0.083	0.081	0.078	0.077
20.0	**0.074**	0.093	0.091	0.089	0.087	0.085	0.083	0.082	0.080	0.078	0.077	0.076	0.073	0.072
20.5	**0.069**	0.087	0.085	0.083	0.081	0.079	0.078	0.076	0.075	0.073	0.072	0.071	0.068	0.067
21.0	**0.065**	0.081	0.079	0.077	0.076	0.074	0.073	0.071	0.070	0.069	0.067	0.066	0.064	0.063
21.5	**0.062**	0.076	0.075	0.073	0.072	0.070	0.069	0.067	0.066	0.065	0.064	0.063	0.061	0.060
22.0	**0.058**	0.071	0.070	0.069	0.067	0.066	0.064	0.063	0.062	0.061	0.060	0.059	0.057	0.056
22.5	**0.054**	0.067	0.066	0.064	0.063	0.062	0.061	0.059	0.058	0.057	0.056	0.055	0.054	0.053
23.0	**0.051**	0.063	0.062	0.060	0.059	0.058	0.057	0.056	0.055	0.054	0.053	0.052	0.050	0.049
23.5	**0.048**	0.059	0.058	0.057	0.055	0.054	0.053	0.052	0.051	0.051	0.050	0.049	0.047	0.047
24.0	**0.045**	0.054	0.053	0.052	0.051	0.050	0.049	0.049	0.048	0.047	0.046	0.046	0.044	0.044
24.5	**0.041**	0.049	0.048	0.047	0.046	0.046	0.045	0.044	0.043	0.043	0.042	0.042	0.040	0.040
25.0	**0.036**	0.043	0.043	0.042	0.041	0.040	0.040	0.039	0.039	0.038	0.037	0.037	0.036	0.036
25.5	**0.032**	0.038	0.037	0.037	0.036	0.035	0.035	0.034	0.034	0.033	0.033	0.032	0.032	0.031
26.0	**0.027**	0.032	0.032	0.031	0.031	0.030	0.030	0.029	0.029	0.029	0.028	0.028	0.027	0.027
26.5	**0.023**	0.028	0.027	0.027	0.026	0.026	0.025	0.025	0.025	0.024	0.024	0.024	0.023	0.023
27.0	**0.020**	0.023	0.023	0.023	0.022	0.022	0.022	0.021	0.021	0.021	0.020	0.020	0.020	0.020
27.5	**0.017**	0.020	0.019	0.019	0.019	0.018	0.018	0.018	0.018	0.017	0.017	0.017	0.017	0.017
28.0	**0.014**	0.017	0.016	0.016	0.016	0.016	0.015	0.015	0.015	0.015	0.015	0.015	0.014	0.014
28.5	**0.013**	0.015	0.014	0.014	0.014	0.014	0.014	0.013	0.013	0.013	0.013	0.013	0.012	0.012
29.0	**0.012**	0.014	0.014	0.013	0.013	0.013	0.013	0.013	0.012	0.012	0.012	0.012	0.012	0.012
29.5	**0.011**	0.013	0.013	0.013	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.011	0.011
30.0	**0.011**	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.011	0.011	0.011	0.011	0.011

Table 8-11: C_t values, Load Optimized Mode LO2 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

T05 0053-3711 Ver 06 - Approved - Exported from DMS: 2019-01-18 by FRPIC

8.12 Sound Curves, Load Optimized Mode LO2 (HWO)

Sound Power Level at Hub Height	
Conditions for Sound Power Level:	**Measurement standard IEC 61400-11 ed. 3** **Maximum turbulence at hub height: 30%** **Inflow angle (vertical): 0 ±2°** **Air density: 1.225 kg/m^3**
Wind speed at hub height [m/s]	**Sound Power Level at Hub Height [dBA]** **Load Optimized Mode LO2 (Blades with serrated trailing edge)**
3	91.8
4	92.1
5	93.9
6	97.1
7	100.4
8	103.4
9	105.5
10	105.8
11	105.8
12	105.8
13	105.8
14	105.8
15	105.8
16	105.8
17	105.8
18	105.8
19	105.8
20	105.8

Table 8-12: Sound curves, Load Optimized Mode LO2 (High Wind Operation)

VESTAS PROPRIETARY NOTICE

Original Instruction: T05 0053-3711 VER 06

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