

Power Curves
and
Sound Power Levels
VENSYS 82 – 1.5 MW

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Wind turbine data	
Turbine:	VENSYS 82
Rated power:	1500 kW
Rotor diameter:	82.3 m
Cut-in wind speed:	3.0 m/s
Cut-out wind speed:	22.0 m/s

Determination for the power curve verification	
Verification according to:	IEC 61400-12-1:2017
Wind speed at hub height:	10 min average
Measurement of power:	Low voltage side. 620 V
Air density:	1.225 kg/m ³
Turbulence intensity:	9% $\frac{(0.75v_1+5.6)}{v_1}$
Wind shear exponent:	$0 \leq \alpha \leq 0.2$
Wind flow inclination:	$0^\circ \pm 2^\circ$
Blades:	No impurity/damage No icing

Determination for the sound power level verification	
Verification according to:	IEC 61400-11:2012
Air density:	1.225 kg/m ³
Turbulence intensity:	9% $\frac{(0.75v_1+5.6)}{v_1}$
Wind shear exponent:	$0 \leq \alpha \leq 0.2$
Wind flow inclination:	$0^\circ \pm 2^\circ$
Blades:	No impurity/damage No icing

1. The tonal audibility in the close-up range is $\Delta L_{a,k} < 0$ dB for the whole standard wind speed range.
2. Turbine noise in the close-up range is free of impulsivity for the whole standard wind speed range.
3. Due to uncertainties of production and measurement tolerances the indicated values are valid with an uncertainty of $\sigma_R = 0.5$ dB (A) and $\sigma_P = 1.2$ dB(A).
4. This data sheet cannot guarantee any site or project specific sound power level.

Prognosticated Sound Power Levels (SPL) of the VENSYS 82								
V _{Hub} [m/s]	Mode 0 [dB(A)]	Mode 1 [dB(A)]	Mode 2 [dB(A)]	Mode 3 [dB(A)]	Mode 4 [dB(A)]	Mode 5 [dB(A)]	Mode 6 [dB(A)]	Mode 7 [dB(A)]
3.0	86.3	86.3	86.3	86.3	86.3	86.3	86.3	86.3
3.5	86.3	86.3	86.3	86.3	86.3	86.3	86.3	86.3
4.0	86.3	86.3	86.3	86.3	86.3	86.3	86.3	86.3
4.5	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6
5.0	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8
5.5	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0
6.0	93.2	93.2	93.2	93.2	93.2	93.2	93.2	93.2
6.5	95.4	95.4	95.4	95.4	95.4	95.4	95.4	95.4
7.0	97.7	97.7	97.7	97.7	97.7	97.7	97.7	97.7
7.5	99.9	99.9	99.9	99.9	99.9	99.9	99.0	98.0
8.0	102.1	102.1	102.1	102.0	101.0	100.0	99.0	98.0
8.5	104.3	104.0	103.0	102.0	101.0	100.0	99.0	98.0
9.0	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
9.5	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
10.0	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
10.5	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
11.0	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
11.5	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
12.0	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
12.5	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
13.0	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
13.5	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
14.0	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
14.5	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
15.0	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
15.5	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
16.0	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
16.5	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
17.0	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
17.5	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
18.0	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
18.5	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
19.0	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
19.5	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
20.0	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
20.5	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
21.0	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
21.5	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0
22.0	104.5	104.0	103.0	102.0	101.0	100.0	99.0	98.0

Octave sound power spectrum in dB(A) for the maximum Sound Power Level

Frequency [Hz]	Mode 0 [dB(A)]	Mode 1 [dB(A)]	Mode 2 [dB(A)]	Mode 3 [dB(A)]	Mode 4 [dB(A)]	Mode 5 [dB(A)]	Mode 6 [dB(A)]	Mode 7 [dB(A)]
63	83.3	82.8	81.8	80.8	79.7	78.6	77.5	76.4
125	93.4	93.0	91.9	90.9	89.9	88.7	87.6	86.4
250	98.1	97.6	96.7	95.8	94.8	93.8	92.8	91.7
500	99.3	98.8	97.8	96.7	95.7	94.5	93.4	92.4
1000	97.8	97.3	96.4	95.4	94.3	93.3	92.4	91.5
2000	95.5	94.9	93.8	92.9	92.1	91.4	90.5	89.7
4000	90.5	89.7	88.6	87.7	86.9	86.2	85.0	83.9
8000	78.8	78.1	76.9	76.9	76.1	76.2	75.0	73.9

**Third octave sound power spectrum in dB(A) for the maximum
Sound Power Level**

Frequency [Hz]	Mode 0 [dB(A)]	Mode 1 [dB(A)]	Mode 2 [dB(A)]	Mode 3 [dB(A)]	Mode 4 [dB(A)]	Mode 5 [dB(A)]	Mode 6 [dB(A)]	Mode 7 [dB(A)]
31.5	63.7	63.2	62.4	61.7	60.5	59.5	58.7	57.8
40	67.9	67.4	66.6	65.8	64.7	63.8	62.9	62.1
50	72.4	72.0	71.1	70.4	69.3	68.4	67.4	66.4
63	77.1	76.6	75.7	74.8	73.7	72.7	71.6	70.4
80	81.7	81.1	80.0	78.9	77.9	76.7	75.6	74.5
100	85.8	85.2	84.1	83.0	82.0	80.8	79.7	78.5
125	88.5	88.0	87.1	86.3	85.2	84.1	82.9	81.8
160	90.5	90.0	88.9	87.8	86.8	85.6	84.5	83.4
200	91.7	91.3	90.4	89.5	88.4	87.5	86.5	85.4
250	93.5	93.1	92.2	91.4	90.3	89.6	88.5	87.4
315	94.2	93.8	92.9	91.9	90.8	89.6	88.6	87.6
400	94.5	94.1	93.1	92.0	91.0	89.8	88.8	87.8
500	94.6	94.1	93.0	92.0	90.9	89.7	88.7	87.6
630	94.5	94.0	92.9	91.8	90.8	89.6	88.5	87.5
800	94.1	93.6	92.6	91.5	90.5	89.3	88.3	87.3
1000	92.8	92.4	91.4	90.5	89.4	88.4	87.6	86.7
1250	91.9	91.4	90.4	89.5	88.4	87.6	86.8	86.1
1600	91.3	90.8	89.7	88.8	87.8	87.0	86.2	85.6
2000	90.8	90.2	89.0	88.1	87.2	86.7	85.9	85.1
2500	90.1	89.4	88.3	87.4	86.8	86.3	85.1	84.0
3150	88.3	87.5	86.4	85.5	84.7	83.9	82.8	81.7
4000	84.8	84.0	82.9	81.9	81.3	80.6	79.4	78.3
5000	81.3	80.6	79.5	78.7	77.9	77.3	76.2	75.0
6300	77.3	76.6	75.4	75.3	74.4	74.4	73.2	72.1
8000	72.2	71.5	70.4	70.6	69.8	70.2	69.1	67.9
10000	67.4	66.7	65.6	65.6	65.2	65.8	64.6	63.6
12500	61.5	60.8	59.7	59.7	59.4	60.2	59.2	58.4