Sound Power Level of the ENERCON E-101 Operational Mode I (Data Sheet)

Imprint

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Updates: ENERCON GmbH reserves the right to continuously update and modify this document and the items described therein at any time without prior notice.

Revision

Revision: 1.3

Department: ENERCON GmbH / Site Assessment

Glossary

WEC	means an ENERCON wind energy converter.
WECs	means more than one ENERCON wind energy converter.

Sound Power Level for the E-101 with 3050 kW rated power

in relation to standardized wind speed v_S at 10 m height					
hub height / V_s in 10 m height		99 m	135 m	149 m	
5 m/s		99,0 dB(A)	99,8 dB(A)	100,1 dB(A)	
6 m/s		102,9 dB(A)	103,8 dB(A)	104,0 dB(A)	
7 m/s		105,4 dB(A)	105,8 dB(A)	105,9 dB(A)	
8 m/s		106,0 dB(A)	106,0 dB(A)	106,0 dB(A)	
9 m/s		106,0 dB(A)	106,0 dB(A)	106,0 dB(A)	
10 m/s		106,0 dB(A)	106,0 dB(A)	106,0 dB(A)	
95% rated power		106,0 dB(A)	106,0 dB(A)	106,0 dB(A)	

in relation to wind speed at hub height									
wind speed at hub height [m/s]	7	8	9	10	11	12	13	14	15
Sound Power Level [dB(A)]	98.5	101.4	103.8	105.4	106.0	106.0	106.0	106.0	106.0

1. The relation between the sound power level and the standardized wind speed v_S in 10 m height as shown above is valid on the premise of a logarithmic wind profile with a roughness length of 0.05 m. The relation between the sound power level and the wind speed at hub height applies for all hub heights. During the sound measurements the wind speeds are derived from the power output and the power curve of the WEC.

2. A tonal audibility of $\Delta L_{a,k}$ < 2 dB can be expected over the whole operational range (valid in the near vicinity of the turbine according to IEC 61 400 -11 ed. 2).

3. The sound power level values given in the table are valid for the **Operational Mode I**. The respective power curve is the calculated power curve E-101 dated October 2009 (Rev. 2.0).

4. Due to the typical measurement uncertainties, if the sound power level is measured according to one of the accepted methods the measured values can differ from the values shown in this document in the range of +/- 1 dB.

Accepted measurement methods are:

a) IEC 61400-11 ed. 2 („Wind turbine generator systems – Part 11: Acoustic noise measurement techniques; Second edition, 2002-12“), and

b) the FGW-Guidelines („Technische Richtlinie für Windenergieanlagen – Teil 1: Bestimmung der Schallemissionswerte“, published by the association “Fördergesellschaft für Windenergie e.V.”, 18th revision).

If the difference between total noise and background noise during a measurement is less than 6 dB a higher uncertainty must be considered.

5. For noise-sensitive sites it is possible to operate the E-101 with reduced rotational speed and reduced rated power during night time. The sound power levels resulting from such operational mode can be provided in a separate document upon request.

6. The sound power level of a wind turbine depends on several factors such as but not limited to regular maintenance and day-to-day operation in compliance with the manufacturer's operating instructions. Therefore, this data sheet can not, and is not intended to, constitute an express or implied warranty towards the customer that the E-101 WEC will meet the exact sound power level values as shown in this document at any project specific site.