

Technical Report

Octave sound power levels

Nordex N117/2400 - Sound Optimised Mode 105.0 dB(A)

Document Number:
K0818_038006_EN

Revision:
00

Created: _____
R. Haevernick

Date:
2011-11-30

Responsible Department:
Central Engineering/TAP

Checked: _____
H. Resing-Wörmer

Confidentiality:
Public

AST:
6761

Released: _____
H. Resing-Wörmer

Replaces:
-

Validity:
K HBG BGG P/T
K08 G Gamma T

Document published in electronic form. Signed original at Central Engineering/ENS.

© Nordex Energy GmbH, Langenhorner Chaussee 600, D-22419 Hamburg
All rights reserved. Observe protection notice ISO 16016.

Validity

Platform/Type Code	Type Name
K08T19; K08/21	N117/2400 (50Hz); N117/2400 (60Hz)

Revision Index

Rev.	Date	Author	Modification (Section)	AST
00	2011-11-30	Haevernick	New	6761

References

Document No., Revision/Edition	Description
	Nordex Documents
Nordex F008_238_A46_EN_R00	Nordex N117/2500 Sound power levels Sound Optimised Mode 105.0 dB(A), Revision 00, 2011-11-30
	Standards/Guidelines

Table of Contents

1	General	3
1.1	Subject of this Report	3
1.2	Abbreviations, Definitions, Symbols	3
2	Determination of the octave sound power levels	3
2.1	Hub height 91 m	3
2.2	Hub height 120 m	4
2.3	Hub height 141 m	4
3	Protection Notice ISO 16016	4

1 General

1.1 Subject of this Report

The expected octave sound power levels of the Nordex N117/2400 (sound optimised Mode 105.0 dB(A)) are to be determined on basis of aerodynamical calculations and expected sound power levels (see document F008_238_A46_EN_R00).

The expected octave sound power levels are only for information and will not be warranted.

1.2 Abbreviations, Definitions, Symbols

L_{WA}: A-weighted sound power level

v_s: wind speed converted to reference conditions (hub height 10 m, roughness length 0.05 m) using a logarithmic profile

2 Determination of the octave sound power levels

2.1 Hub height 91 m

The octave sound power levels of the Nordex N117/2400 (sound optimised Mode 105.0 dB(A)) are determined on basis of aerodynamical calculations and expected sound power levels according to Nordex Document F008_238_A46_EN_R00. These values are valid for the hub height 91 m.

Frequency	Octave sound power levels at standardized wind speeds v_s in dB(A)									
	3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
63 Hz	74.8	76.8	78.8	80.8	88.9	88.9	88.9	88.9	88.9	88.9
125 Hz	82.2	84.2	86.2	88.2	92.6	92.6	92.6	92.6	92.6	92.6
250 Hz	91.3	93.3	95.3	97.3	97.4	97.4	97.4	97.4	97.4	97.4
500 Hz	92.5	94.5	96.5	98.5	99.4	99.4	99.4	99.4	99.4	99.4
1000 Hz	90.3	92.3	94.3	96.3	99.3	99.3	99.3	99.3	99.3	99.3
2000 Hz	86.6	88.6	90.6	92.6	96.6	96.6	96.6	96.6	96.6	96.6
4000 Hz	81.2	83.2	85.2	87.2	92.1	92.1	92.1	92.1	92.1	92.1
8000 Hz	68.3	70.3	72.3	74.3	83.0	83.0	83.0	83.0	83.0	83.0
Total sound power level	97.0	99.0	101.0	103.0	105.0	105.0	105.0	105.0	105.0	105.0

2.2 Hub height 120 m

The octave sound power levels of the Nordex N117/2400 (sound optimised Mode 105.0 dB(A)) are determined on basis of aerodynamical calculations and expected sound power levels according to Nordex Document F008_238_A46_EN_R00. These values are valid for the hub height 120 m.

Frequency	Octave sound power levels at standardized wind speeds v_s in dB(A)									
	3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
63 Hz	75.0	77.0	79.2	81.4	88.9	88.9	88.9	88.9	88.9	88.9
125 Hz	82.4	84.4	86.6	88.8	92.6	92.6	92.6	92.6	92.6	92.6
250 Hz	91.5	93.5	95.7	97.9	97.4	97.4	97.4	97.4	97.4	97.4
500 Hz	92.7	94.7	96.9	99.1	99.4	99.4	99.4	99.4	99.4	99.4
1000 Hz	90.5	92.5	94.7	96.9	99.3	99.3	99.3	99.3	99.3	99.3
2000 Hz	86.8	88.8	91.0	93.2	96.6	96.6	96.6	96.6	96.6	96.6
4000 Hz	81.4	83.4	85.6	87.8	92.1	92.1	92.1	92.1	92.1	92.1
8000 Hz	68.5	70.5	72.7	74.9	83.0	83.0	83.0	83.0	83.0	83.0
Total sound power level	97.2	99.2	101.4	103.6	105.0	105.0	105.0	105.0	105.0	105.0

2.3 Hub height 141 m

The octave sound power levels of the Nordex N117/2400 (sound optimised Mode 105.0 dB(A)) are determined on basis of aerodynamical calculations and expected sound power levels according to Nordex Document F008_238_A46_EN_R00. These values are valid for the hub height 141 m.

Frequency	Octave sound power levels at standardized wind speeds v_s in dB(A)									
	3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s	11 m/s	12 m/s
63 Hz	75.1	77.2	79.4	81.7	88.9	88.9	88.9	88.9	88.9	88.9
125 Hz	82.5	84.6	86.8	89.1	92.6	92.6	92.6	92.6	92.6	92.6
250 Hz	91.6	93.7	95.9	98.2	97.4	97.4	97.4	97.4	97.4	97.4
500 Hz	92.8	94.9	97.1	99.4	99.4	99.4	99.4	99.4	99.4	99.4
1000 Hz	90.6	92.7	94.9	97.2	99.3	99.3	99.3	99.3	99.3	99.3
2000 Hz	86.9	89.0	91.2	93.5	96.6	96.6	96.6	96.6	96.6	96.6
4000 Hz	81.5	83.6	85.8	88.1	92.1	92.1	92.1	92.1	92.1	92.1
8000 Hz	68.6	70.7	72.9	75.2	83.0	83.0	83.0	83.0	83.0	83.0
Total sound power level	97.3	99.4	101.6	103.9	105.0	105.0	105.0	105.0	105.0	105.0

3 Protection Notice ISO 16016

The reproduction, distribution and utilization of this document as well as the communication of its contents to others without explicit authorization are prohibited. Offenders will be held liable for the payment of damages. All rights reserved in the event of the grant of a patent, utility model or design.