

Figure 26 : Evolution du niveau sonore résiduel en fonction de la vitesse du vent sur site, sur les périodes cœur de journée (7h00 - 21h00) et cœur de nuit (22h00 - 5h30) pour la ZER Saint-Coutant (Point de mesure C)

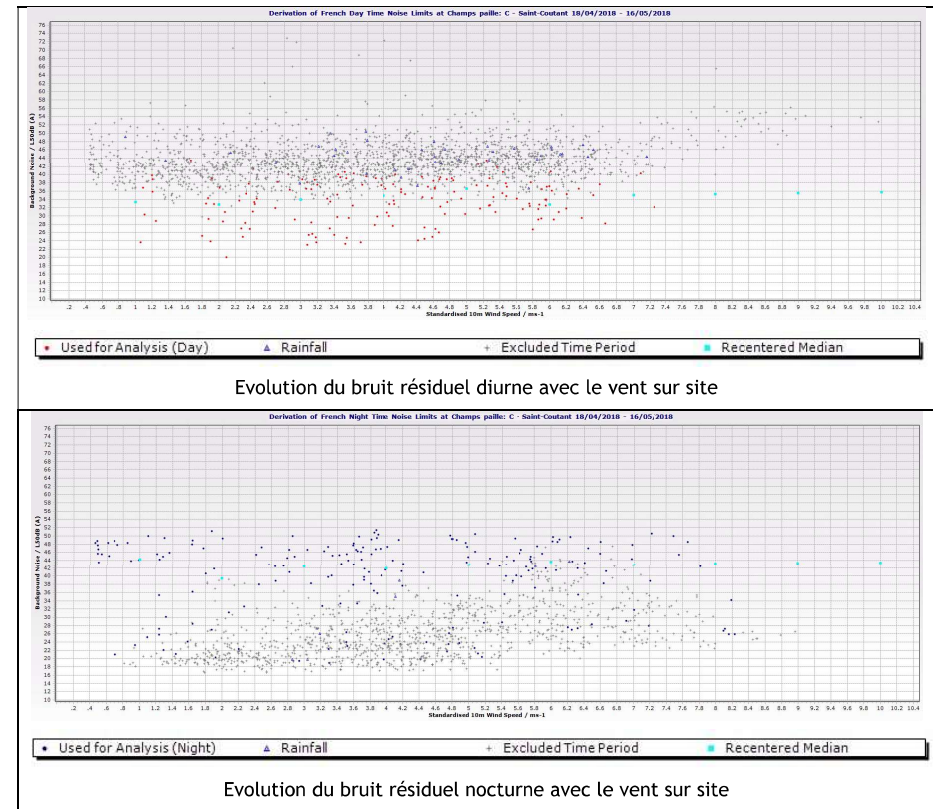
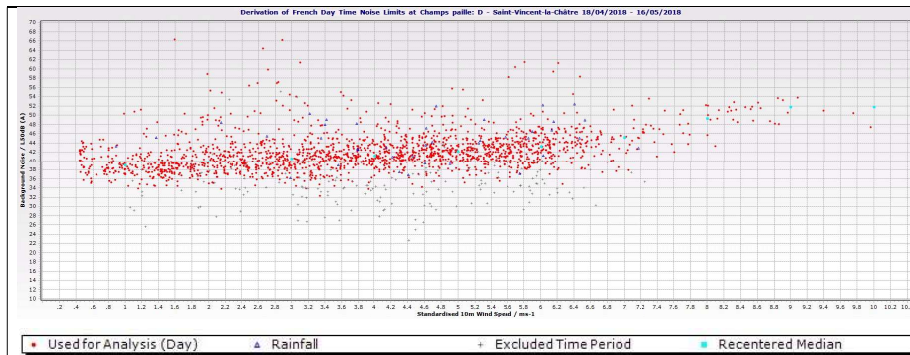
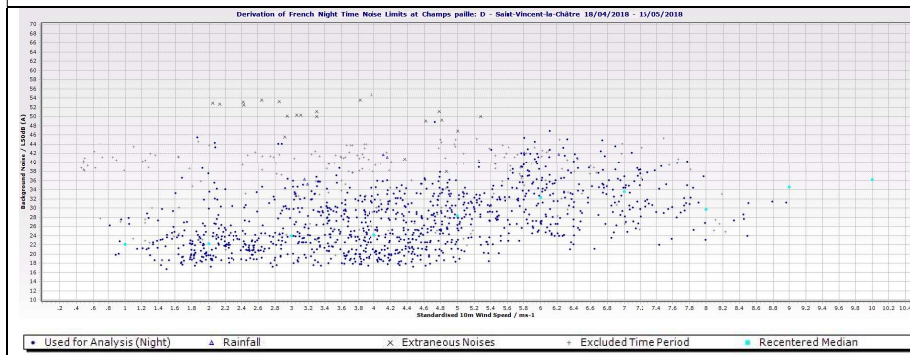


Figure 27 : Evolution du niveau sonore résiduel en fonction de la vitesse du vent sur site, sur les périodes fin de journée (21h00 - 22h00) et fin de nuit (5h30 - 7h00) pour la ZER Saint-Coutant (Point de mesure C)

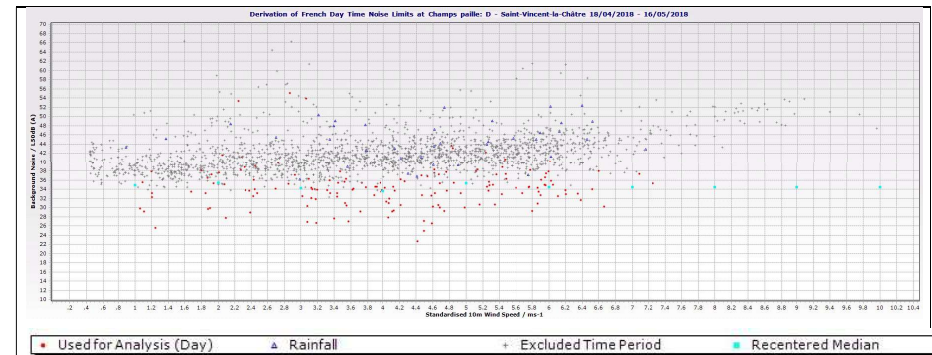


Evolution du bruit résiduel diurne avec le vent sur site

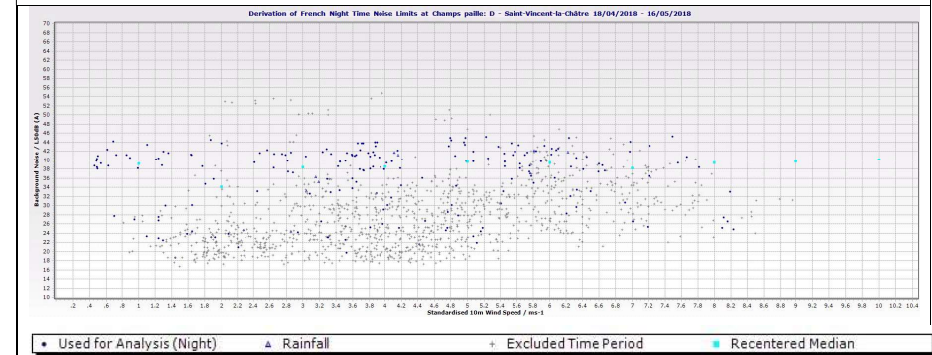


Evolution du bruit résiduel nocturne avec le vent sur site

Figure 28 : Evolution du niveau sonore résiduel en fonction de la vitesse du vent sur site, sur les périodes cœur de journée (7h00 - 21h00) et cœur de nuit (22h00 - 5h30) pour la ZER Saint-Vincent-la-Châtre (Point de mesure D)

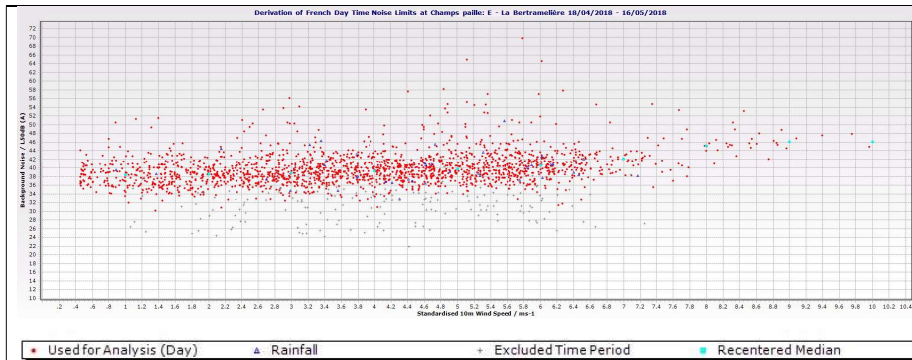


Evolution du bruit résiduel diurne avec le vent sur site

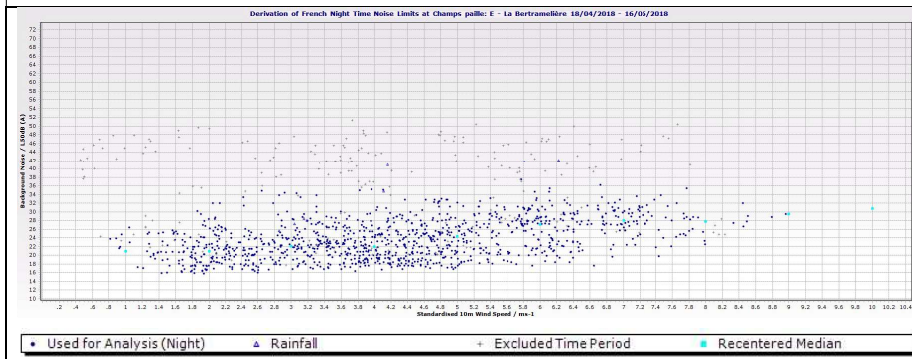


Evolution du bruit résiduel nocturne avec le vent sur site

Figure 29 : Evolution du niveau sonore résiduel en fonction de la vitesse du vent sur site, sur les périodes fin de journée (21h00 - 22h00) et fin de nuit (5h30 - 7h00) pour la ZER Saint-Vincent-la-Châtre (Point de mesure D)

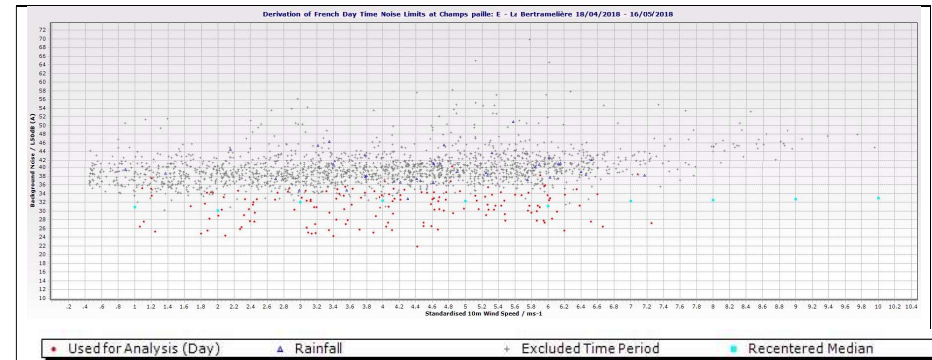


Evolution du bruit résiduel diurne avec le vent sur site

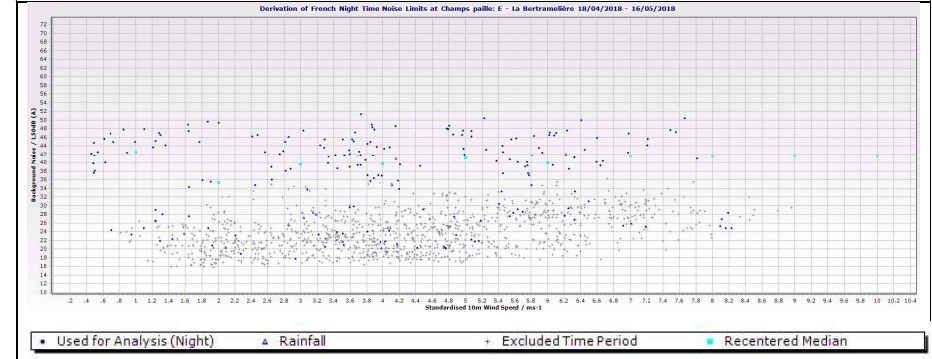


Evolution du bruit résiduel nocturne avec le vent sur site

Figure 30 : Evolution du niveau sonore résiduel en fonction de la vitesse du vent sur site, sur les périodes cœur de journée (7h00 - 21h00) et cœur de nuit (22h00 - 5h30) pour la ZER La Bertramière (Point de mesure E)



Evolution du bruit résiduel diurne avec le vent sur site



Evolution du bruit résiduel nocturne avec le vent sur site

Figure 31 : Evolution du niveau sonore résiduel en fonction de la vitesse du vent sur site, sur les périodes fin de journée (21h00 - 22h00) et fin de nuit (5h30 - 7h00) pour la ZER La Bertramière (Point de mesure E)

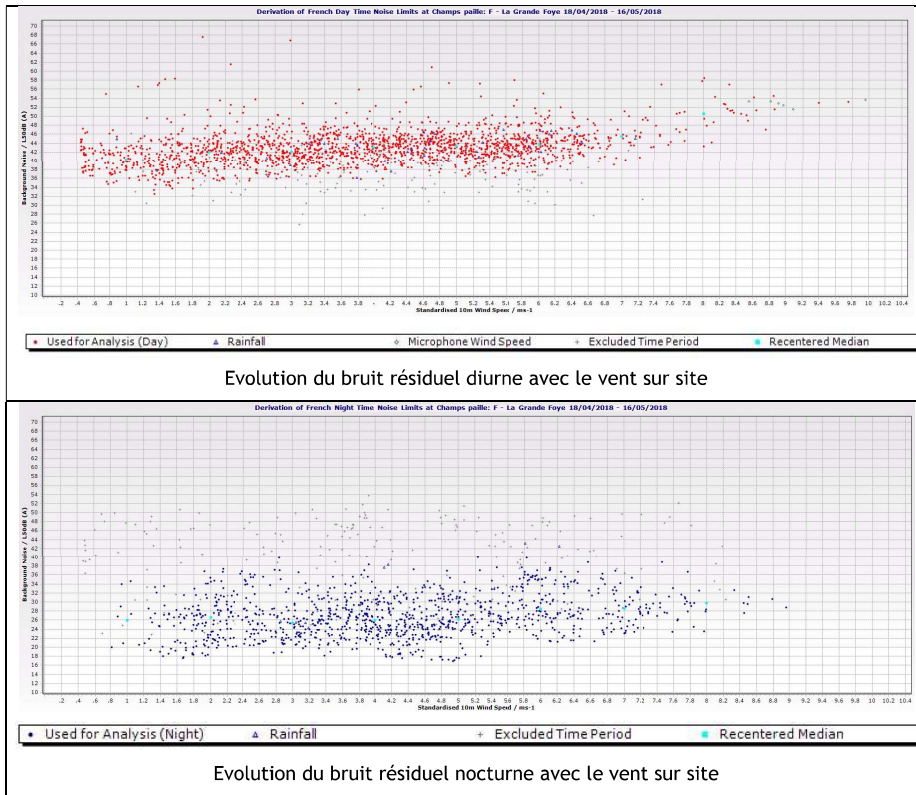


Figure 32 : Evolution du niveau sonore résiduel en fonction de la vitesse du vent sur site, sur les périodes cœur de journée (7h00 - 21h00) et cœur de nuit (22h00 - 5h30) pour la ZER La Grande Foye (Point de mesure F)

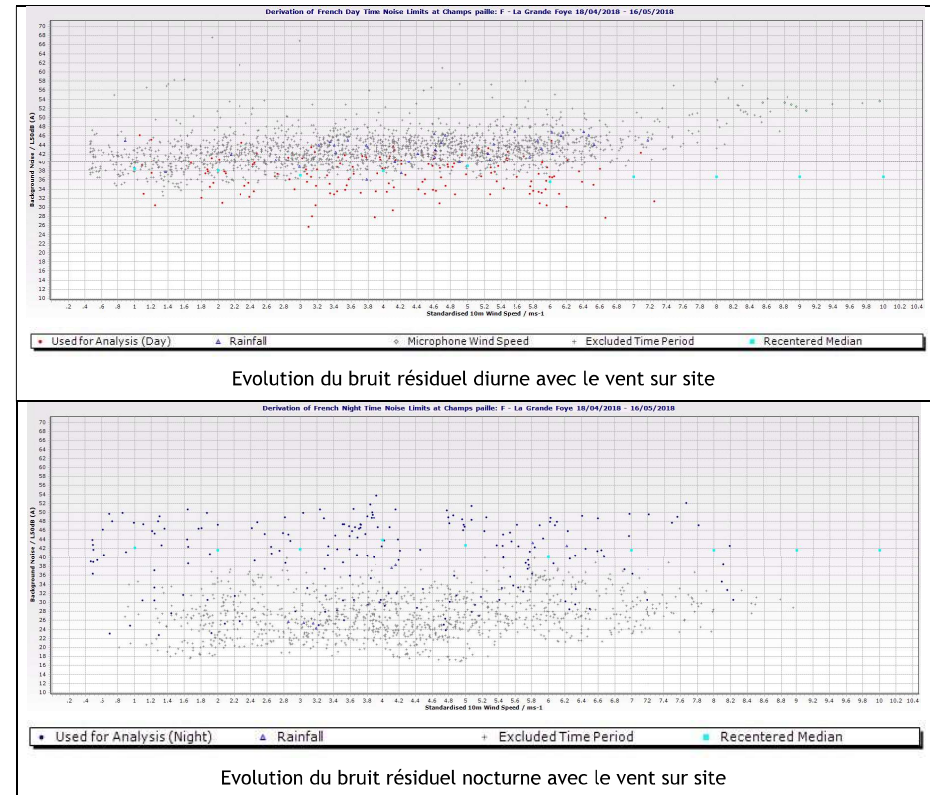


Figure 33 : Evolution du niveau sonore résiduel en fonction de la vitesse du vent sur site, sur les périodes fin de journée (21h00 - 22h00) et fin de nuit (5h30 - 7h00) pour la ZER La Grande Foye (Point de mesure F)

**Annexe 3 CERTIFICATS D'EMISSION SONORE DE L'EOLIENNE RETENUE**

Certificats d'émission sonore de l'aérogénérateur Nordex N149 4.5MW pour les calculs de modélisation du projet Champs Paille

Octave sound power levels with serrated trailing edge


**Mode 0**
**hub height 105 m – 106.1 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	68.1	71.6	75.6	77.5	77.7	77.7	77.7	77.7	77.7	
63 Hz	77.1	78.1	81.6	85.6	87.5	87.8	87.8	87.8	87.8	87.8	
125 Hz	83.7	84.7	88.2	92.2	94.0	94.0	94.0	94.0	94.0	94.0	
250 Hz	86.6	87.6	91.9	95.9	97.7	97.7	97.7	97.7	97.7	97.7	
500 Hz	87.6	88.6	94.0	98.0	99.8	100.3	100.3	100.3	100.3	100.3	
1000 Hz	88.0	89.0	95.3	99.3	101.1	101.0	101.0	101.0	101.0	101.0	
2000 Hz	86.2	87.2	93.4	97.4	99.3	98.5	98.5	98.5	98.5	98.5	
4000 Hz	80.5	81.5	83.8	87.8	89.7	90.9	90.9	90.9	90.9	90.9	
8000 Hz	71.3	72.3	75.9	79.9	81.8	82.9	82.9	82.9	82.9	82.9	
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.0</b>	<b>100.3</b>	<b>104.3</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>

**hub height 125 m – 106.1 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	68.5	72.1	76.1	77.5	77.7	77.7	77.7	77.7	77.7	
63 Hz	77.1	78.5	82.1	86.1	87.5	87.8	87.8	87.8	87.8	87.8	
125 Hz	83.7	85.1	88.7	92.7	94.0	94.0	94.0	94.0	94.0	94.0	
250 Hz	86.6	88.0	92.4	96.4	97.7	97.7	97.7	97.7	97.7	97.7	
500 Hz	87.6	89.0	94.5	98.5	99.8	100.3	100.3	100.3	100.3	100.3	
1000 Hz	88.0	89.4	95.8	99.8	101.1	101.0	101.0	101.0	101.0	101.0	
2000 Hz	86.2	87.6	93.9	97.9	99.3	98.5	98.5	98.5	98.5	98.5	
4000 Hz	80.5	81.9	84.3	88.3	89.7	90.9	90.9	90.9	90.9	90.9	
8000 Hz	71.3	72.7	76.4	80.4	81.8	82.9	82.9	82.9	82.9	82.9	
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.4</b>	<b>100.8</b>	<b>104.8</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>

**hub height 145 m – 106.1 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	68.9	72.5	76.5	77.5	77.7	77.7	77.7	77.7	77.7	
63 Hz	77.1	78.9	82.5	86.5	87.5	87.8	87.8	87.8	87.8	87.8	
125 Hz	83.7	85.5	89.1	93.1	94.0	94.0	94.0	94.0	94.0	94.0	
250 Hz	86.6	88.4	92.8	96.8	97.7	97.7	97.7	97.7	97.7	97.7	
500 Hz	87.6	89.4	94.9	98.9	99.8	100.3	100.3	100.3	100.3	100.3	
1000 Hz	88.0	89.8	96.2	100.2	101.1	101.0	101.0	101.0	101.0	101.0	
2000 Hz	86.2	88.0	94.3	98.3	99.3	98.5	98.5	98.5	98.5	98.5	
4000 Hz	80.5	82.3	84.7	88.7	89.7	90.9	90.9	90.9	90.9	90.9	
8000 Hz	71.3	73.1	76.8	80.8	81.8	82.9	82.9	82.9	82.9	82.9	
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.8</b>	<b>101.2</b>	<b>105.2</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>

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Certificats d'émission sonore de l'aérogénérateur Nordex N149 4.5MW, Mode 0 « 106.1dB(A) »

Octave sound power levels with serrated trailing edge


**hub height 164 m – 106.1 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	69.2	72.8	76.8	77.5	77.7	77.7	77.7	77.7	77.7	
63 Hz	77.1	79.2	82.8	86.8	87.5	87.8	87.8	87.8	87.8	87.8	
125 Hz	83.7	85.8	89.4	93.4	94.0	94.0	94.0	94.0	94.0	94.0	
250 Hz	86.6	88.7	93.1	97.1	97.7	97.7	97.7	97.7	97.7	97.7	
500 Hz	87.6	89.7	95.2	99.2	99.8	100.3	100.3	100.3	100.3	100.3	
1000 Hz	88.0	90.1	96.5	100.5	101.1	101.0	101.0	101.0	101.0	101.0	
2000 Hz	86.2	88.3	94.6	98.6	99.3	98.5	98.5	98.5	98.5	98.5	
4000 Hz	80.5	82.6	85.0	89.0	89.7	90.9	90.9	90.9	90.9	90.9	
8000 Hz	71.3	73.4	77.1	81.1	81.8	82.9	82.9	82.9	82.9	82.9	
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>96.1</b>	<b>101.5</b>	<b>105.5</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>	<b>106.1</b>

**Mode 1**
**hub height 105 m – 105.5 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	68.1	71.6	75.6	76.9	77.1	77.1	77.1	77.1	77.1	
63 Hz	77.1	78.1	81.6	85.6	86.9	87.2	87.2	87.2	87.2	87.2	
125 Hz	83.7	84.7	88.2	92.2	93.4	93.4	93.4	93.4	93.4	93.4	
250 Hz	86.6	87.6	91.9	95.9	97.1	97.1	97.1	97.1	97.1	97.1	
500 Hz	87.6	88.6	94.0	98.0	99.2	99.7	99.7	99.7	99.7	99.7	
1000 Hz	88.0	89.0	95.3	99.3	100.5	100.4	100.4	100.4	100.4	100.4	
2000 Hz	86.2	87.2	93.4	97.4	98.7	97.9	97.9	97.9	97.9	97.9	
4000 Hz	80.5	81.5	83.8	87.8	89.1	90.3	90.3	90.3	90.3	90.3	
8000 Hz	71.3	72.3	75.9	79.9	81.2	82.3	82.3	82.3	82.3	82.3	
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.0</b>	<b>100.3</b>	<b>104.3</b>	<b>105.5</b>	<b>105.5</b>	<b>105.5</b>	<b>105.5</b>	<b>105.5</b>	<b>105.5</b>	<b>105.5</b>

**hub height 125 m – 105.5 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	68.5	72.1	76.1	76.9	77.1	77.1	77.1	77.1	77.1	
63 Hz	77.1	78.5	82.1	86.1	86.9	87.2	87.2	87.2	87.2	87.2	
125 Hz	83.7	85.1	88.7	92.7	93.4	93.4	93.4	93.4	93.4	93.4	
250 Hz	86.6	88.0	92.4	96.4	97.1	97.1	97.1	97.1	97.1	97.1	
500 Hz	87.6	89.0	94.5	98.5	99.2	99.7	99.7	99.7	99.7	99.7	
1000 Hz	88.0	89.4	95.8	99.8	100.5	100.4	100.4	100.4	100.4	100.4	
2000 Hz	86.2	87.6	93.9	97.9	98.7	97.9	97.9	97.9	97.9	97.9	
4000 Hz	80.5	81.9	84.3	88.3	89.1	90.3	90.3	90.3	90.3	90.3	
8000 Hz	71.3	72.7	76.4	80.4	81.2	82.3	82.3	82.3	82.3	82.3	
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.4</b>	<b>100.8</b>	<b>104.8</b>	<b>105.5</b>	<b>105.5</b>	<b>105.5</b>	<b>105.5</b>	<b>105.5</b>	<b>105.5</b>	<b>105.5</b>

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Certificats d'émission sonore de l'aérogénérateur Nordex N149 4.5MW, Mode 1 « 105.5dB(A) »

Octave sound power levels with serrated trailing edge


**Mode 3**
**hub height 105 m – 104.6 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_g$											
Frequency	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	
31.5 Hz	67.1	68.1	71.6	75.6	76.0	76.2	76.2	76.2	76.2	76.2	
63 Hz	77.1	78.1	81.6	85.6	86.0	86.3	86.3	86.3	86.3	86.3	
125 Hz	83.7	84.7	88.2	92.2	92.5	92.5	92.5	92.5	92.5	92.5	
250 Hz	86.6	87.6	91.9	95.9	96.2	96.2	96.2	96.2	96.2	96.2	
500 Hz	87.6	88.6	94.0	98.0	98.3	98.8	98.8	98.8	98.8	98.8	
1000 Hz	88.0	89.0	95.3	99.3	99.6	99.5	99.5	99.5	99.5	99.5	
2000 Hz	86.2	87.2	93.4	97.4	97.8	97.0	97.0	97.0	97.0	97.0	
4000 Hz	80.5	81.5	83.8	87.8	88.2	89.4	89.4	89.4	89.4	89.4	
8000 Hz	71.3	72.3	75.9	79.9	80.3	81.4	81.4	81.4	81.4	81.4	
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.0</b>	<b>100.3</b>	<b>104.3</b>	<b>104.6</b>	<b>104.6</b>	<b>104.6</b>	<b>104.6</b>	<b>104.6</b>	<b>104.6</b>	<b>104.6</b>

**hub height 125 m – 104.6 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_g$											
Frequency	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	
31.5 Hz	67.1	68.5	72.1	75.9	76.0	76.2	76.2	76.2	76.2	76.2	
63 Hz	77.1	78.5	82.1	85.9	86.0	86.3	86.3	86.3	86.3	86.3	
125 Hz	83.7	85.1	88.7	92.5	92.5	92.5	92.5	92.5	92.5	92.5	
250 Hz	86.6	88.0	92.4	96.2	96.2	96.2	96.2	96.2	96.2	96.2	
500 Hz	87.6	89.0	94.5	98.3	98.3	98.8	98.8	98.8	98.8	98.8	
1000 Hz	88.0	89.4	95.8	99.6	99.6	99.5	99.5	99.5	99.5	99.5	
2000 Hz	86.2	87.6	93.9	97.7	97.8	97.0	97.0	97.0	97.0	97.0	
4000 Hz	80.5	81.9	84.3	88.1	88.2	89.4	89.4	89.4	89.4	89.4	
8000 Hz	71.3	72.7	76.4	80.2	80.3	81.4	81.4	81.4	81.4	81.4	
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.4</b>	<b>100.8</b>	<b>104.6</b>	<b>104.6</b>	<b>104.6</b>	<b>104.6</b>	<b>104.6</b>	<b>104.6</b>	<b>104.6</b>	<b>104.6</b>

**hub height 145 m – 104.6 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_g$											
Frequency	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	
31.5 Hz	67.1	69.9	72.5	75.9	76.0	76.2	76.2	76.2	76.2	76.2	
63 Hz	77.1	78.9	82.5	85.9	86.0	86.3	86.3	86.3	86.3	86.3	
125 Hz	83.7	85.5	89.1	92.5	92.5	92.5	92.5	92.5	92.5	92.5	
250 Hz	86.6	88.4	92.8	96.2	96.2	96.2	96.2	96.2	96.2	96.2	
500 Hz	87.6	89.4	94.9	98.3	98.3	98.8	98.8	98.8	98.8	98.8	
1000 Hz	88.0	89.8	96.2	99.6	99.6	99.5	99.5	99.5	99.5	99.5	
2000 Hz	86.2	88.0	94.3	97.7	97.8	97.0	97.0	97.0	97.0	97.0	
4000 Hz	80.5	82.3	84.7	88.1	88.2	89.4	89.4	89.4	89.4	89.4	
8000 Hz	71.3	73.1	76.8	80.2	80.3	81.4	81.4	81.4	81.4	81.4	
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.8</b>	<b>101.2</b>	<b>104.6</b>	<b>104.6</b>	<b>104.6</b>	<b>104.6</b>	<b>104.6</b>	<b>104.6</b>	<b>104.6</b>	<b>104.6</b>

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Certificats d'émission sonore de l'aérogénérateur Nordex N149 4.5MW, Mode 3 « 104.6dB(A) »

Octave sound power levels with serrated trailing edge


**hub height 145 m – 104.1 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_g$											
Frequency	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	
31.5 Hz	67.1	68.9	72.5	75.4	75.5	75.7	75.7	75.7	75.7	75.7	
63 Hz	77.1	78.9	82.5	85.4	85.5	85.8	85.8	85.8	85.8	85.8	
125 Hz	83.7	85.5	89.1	92.0	92.0	92.0	92.0	92.0	92.0	92.0	
250 Hz	86.6	88.4	92.8	95.7	95.7	95.7	95.7	95.7	95.7	95.7	
500 Hz	87.6	89.4	94.9	97.8	97.8	98.3	98.3	98.3	98.3	98.3	
1000 Hz	88.0	89.8	96.2	99.1	99.1	99.0	99.0	99.0	99.0	99.0	
2000 Hz	86.2	88.0	94.3	97.2	97.3	96.5	96.5	96.5	96.5	96.5	
4000 Hz	80.5	82.3	84.7	87.5	87.7	88.9	88.9	88.9	88.9	88.9	
8000 Hz	71.3	73.1	76.8	79.7	79.8	80.9	80.9	80.9	80.9	80.9	
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.8</b>	<b>101.2</b>	<b>104.1</b>	<b>104.1</b>	<b>104.1</b>	<b>104.1</b>	<b>104.1</b>	<b>104.1</b>	<b>104.1</b>	<b>104.1</b>

**hub height 164 m – 104.1 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_g$											
Frequency	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	
31.5 Hz	67.1	69.2	72.8	75.4	75.5	75.7	75.7	75.7	75.7	75.7	
63 Hz	77.1	79.2	82.8	85.4	85.5	85.8	85.8	85.8	85.8	85.8	
125 Hz	83.7	85.8	89.4	92.0	92.0	92.0	92.0	92.0	92.0	92.0	
250 Hz	86.6	88.7	93.1	95.7	95.7	95.7	95.7	95.7	95.7	95.7	
500 Hz	87.6	89.7	95.2	97.8	97.8	98.3	98.3	98.3	98.3	98.3	
1000 Hz	88.0	90.1	96.5	99.1	99.1	99.0	99.0	99.0	99.0	99.0	
2000 Hz	86.2	88.3	94.6	97.2	97.3	96.5	96.5	96.5	96.5	96.5	
4000 Hz	80.5	82.6	85.0	87.6	87.7	88.9	88.9	88.9	88.9	88.9	
8000 Hz	71.3	73.4	77.1	79.7	79.8	80.9	80.9	80.9	80.9	80.9	
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>96.1</b>	<b>101.5</b>	<b>104.1</b>	<b>104.1</b>	<b>104.1</b>	<b>104.1</b>	<b>104.1</b>	<b>104.1</b>	<b>104.1</b>	<b>104.1</b>

**Mode 5**
**hub height 105 m – 103.6 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_g$											
Frequency	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	
31.5 Hz	67.1	68.1	71.6	74.9	75.0	75.2	75.2	75.2	75.2	75.2	
63 Hz	77.1	78.1	81.6	84.9	85.0	85.3	85.3	85.3	85.3	85.3	
125 Hz	83.7	84.7	88.2	91.5	91.5	91.5	91.5	91.5	91.5	91.5	
250 Hz	86.6	87.6	91.9	95.2	95.2	95.2	95.2	95.2	95.2	95.2	
500 Hz	87.6	88.6	94.0	97.3	97.3	97.8	97.8	97.8	97.8	97.8	
1000 Hz	88.0	89.0	95.3	98.6	98.6	98.5	98.5	98.5	98.5	98.5	
2000 Hz	86.2	87.2	93.4	96.7	96.8	96.0	96.0	96.0	96.0	96.0	
4000 Hz	80.5	81.5	83.8	87.1	87.2	88.4	88.4	88.4	88.4	88.4	
8000 Hz	71.3	72.3	75.9	79.2	79.3	80.4	80.4	80.4	80.4	80.4	
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.0</b>	<b>100.3</b>	<b>103.6</b>	<b>103.6</b>	<b>103.6</b>	<b>103.6</b>	<b>103.6</b>	<b>103.6</b>	<b>103.6</b>	<b>103.6</b>

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Octave sound power levels with serrated trailing edge


**Mode 9**
**hub height 105 m – 100.5 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	68.1	71.4	71.8	71.9	72.1	72.1	72.1	72.1	72.1	
63 Hz	77.1	78.1	81.4	81.8	81.9	82.2	82.2	82.2	82.2	82.2	
125 Hz	83.7	84.7	88.0	88.4	88.4	88.4	88.4	88.4	88.4	88.4	
250 Hz	86.6	87.6	91.7	92.1	92.1	92.1	92.1	92.1	92.1	92.1	
500 Hz	87.6	88.6	93.8	94.2	94.2	94.7	94.7	94.7	94.7	94.7	
1000 Hz	88.0	89.0	95.1	95.5	95.5	95.4	95.4	95.4	95.4	95.4	
2000 Hz	86.2	87.2	93.2	93.6	93.7	92.9	92.9	92.9	92.9	92.9	
4000 Hz	80.5	81.5	83.6	84.0	84.1	85.3	85.3	85.3	85.3	85.3	
8000 Hz	71.3	72.3	75.7	76.1	76.2	77.3	77.3	77.3	77.3	77.3	
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.0</b>	<b>100.1</b>	<b>100.5</b>	<b>100.5</b>	<b>100.5</b>	<b>100.5</b>	<b>100.5</b>	<b>100.5</b>	<b>100.5</b>	<b>100.5</b>

**hub height 125 m – 100.5 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	68.5	71.7	71.8	71.9	72.1	72.1	72.1	72.1	72.1	
63 Hz	77.1	78.5	81.7	81.8	81.9	82.2	82.2	82.2	82.2	82.2	
125 Hz	83.7	85.1	88.3	88.4	88.4	88.4	88.4	88.4	88.4	88.4	
250 Hz	86.6	88.0	92.0	92.1	92.1	92.1	92.1	92.1	92.1	92.1	
500 Hz	87.6	89.0	94.1	94.2	94.2	94.7	94.7	94.7	94.7	94.7	
1000 Hz	88.0	89.4	95.4	95.5	95.5	95.4	95.4	95.4	95.4	95.4	
2000 Hz	86.2	87.6	93.5	93.6	93.7	92.9	92.9	92.9	92.9	92.9	
4000 Hz	80.5	81.9	83.9	84.0	84.1	85.3	85.3	85.3	85.3	85.3	
8000 Hz	71.3	72.7	76.0	76.1	76.2	77.3	77.3	77.3	77.3	77.3	
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.4</b>	<b>100.4</b>	<b>100.5</b>	<b>100.5</b>	<b>100.5</b>	<b>100.5</b>	<b>100.5</b>	<b>100.5</b>	<b>100.5</b>	<b>100.5</b>

**hub height 145 m – 100.5 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	68.9	71.8	71.8	72.2	72.1	72.1	72.1	72.1	72.1	
63 Hz	77.1	78.9	81.8	81.8	82.3	82.2	82.2	82.2	82.2	82.2	
125 Hz	83.7	85.5	88.4	88.4	88.4	88.4	88.4	88.4	88.4	88.4	
250 Hz	86.6	88.4	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	
500 Hz	87.6	89.4	94.2	94.2	94.7	94.7	94.7	94.7	94.7	94.7	
1000 Hz	88.0	89.8	95.5	95.5	95.4	95.4	95.4	95.4	95.4	95.4	
2000 Hz	86.2	88.0	93.8	93.6	92.9	92.9	92.9	92.9	92.9	92.9	
4000 Hz	80.5	82.3	84.0	84.0	85.4	85.3	85.3	85.3	85.3	85.3	
8000 Hz	71.3	73.1	76.1	76.1	77.3	77.3	77.3	77.3	77.3	77.3	
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.8</b>	<b>100.5</b>	<b>100.5</b>	<b>100.5</b>	<b>100.5</b>	<b>100.5</b>	<b>100.5</b>	<b>100.5</b>	<b>100.5</b>	<b>100.5</b>

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Octave sound power levels with serrated trailing edge


**hub height 145 m – 100.0 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	68.9	71.3	71.3	71.7	71.6	71.6	71.6	71.6	71.6	
63 Hz	77.1	78.9	81.3	81.3	81.8	81.7	81.7	81.7	81.7	81.7	
125 Hz	83.7	85.5	87.9	87.9	87.9	87.9	87.9	87.9	87.9	87.9	
250 Hz	86.6	88.4	91.6	91.6	91.6	91.6	91.6	91.6	91.6	91.6	
500 Hz	87.6	89.4	93.7	93.7	94.2	94.2	94.2	94.2	94.2	94.2	
1000 Hz	88.0	89.8	95.0	95.0	94.9	94.9	94.9	94.9	94.9	94.9	
2000 Hz	86.2	88.0	93.1	93.1	92.4	92.4	92.4	92.4	92.4	92.4	
4000 Hz	80.5	82.3	83.5	83.5	84.9	84.8	84.8	84.8	84.8	84.8	
8000 Hz	71.3	73.1	75.6	75.6	76.8	76.8	76.8	76.8	76.8	76.8	
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.8</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

**hub height 164 m – 100.0 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	69.2	71.3	71.3	71.7	71.6	71.6	71.6	71.6	71.6	
63 Hz	77.1	79.2	81.3	81.3	81.8	81.7	81.7	81.7	81.7	81.7	
125 Hz	83.7	85.8	87.9	87.9	87.9	87.9	87.9	87.9	87.9	87.9	
250 Hz	86.6	88.7	91.6	91.6	91.6	91.6	91.6	91.6	91.6	91.6	
500 Hz	87.6	89.7	93.7	93.7	94.2	94.2	94.2	94.2	94.2	94.2	
1000 Hz	88.0	90.1	95.0	95.0	94.9	94.9	94.9	94.9	94.9	94.9	
2000 Hz	86.2	88.3	93.1	93.1	92.4	92.4	92.4	92.4	92.4	92.4	
4000 Hz	80.5	82.6	83.5	83.5	84.9	84.8	84.8	84.8	84.8	84.8	
8000 Hz	71.3	73.4	75.6	75.6	76.8	76.8	76.8	76.8	76.8	76.8	
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>96.1</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

**Mode 11**
**hub height 105 m – 99.5 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	68.1	70.8	70.8	71.2	71.1	71.1	71.1	71.1	71.1	
63 Hz	77.1	78.1	80.8	80.8	81.3	81.2	81.2	81.2	81.2	81.2	
125 Hz	83.7	84.7	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	
250 Hz	86.6	87.6	91.1	91.1	91.1	91.1	91.1	91.1	91.1	91.1	
500 Hz	87.6	88.6	93.2	93.2	93.7	93.7	93.7	93.7	93.7	93.7	
1000 Hz	88.0	89.0	94.5	94.5	94.4	94.4	94.4	94.4	94.4	94.4	
2000 Hz	86.2	87.2	92.6	92.6	91.9	91.9	91.9	91.9	91.9	91.9	
4000 Hz	80.5	81.5	83.0	83.0	84.4	84.3	84.3	84.3	84.3	84.3	
8000 Hz	71.3	72.3	75.1	75.1	76.3	76.3	76.3	76.3	76.3	76.3	
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.0</b>	<b>99.5</b>	<b>99.5</b>	<b>99.5</b>	<b>99.5</b>	<b>99.5</b>	<b>99.5</b>	<b>99.5</b>	<b>99.5</b>	<b>99.5</b>

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Octave sound power levels with serrated trailing edge


**hub height 164 m – 99.0 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	69.2	70.3	70.3	70.7	70.6	70.6	70.6	70.6	70.6	70.6
63 Hz	77.1	79.2	80.3	80.3	80.8	80.7	80.7	80.7	80.7	80.7	80.7
125 Hz	83.7	85.8	86.9	86.9	86.9	86.9	86.9	86.9	86.9	86.9	86.9
250 Hz	86.6	88.7	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6	90.6
500 Hz	87.6	89.7	92.7	92.7	93.2	93.2	93.2	93.2	93.2	93.2	93.2
1000 Hz	88.0	90.1	94.0	94.0	93.9	93.9	93.9	93.9	93.9	93.9	93.9
2000 Hz	86.2	88.3	92.1	92.1	91.4	91.4	91.4	91.4	91.4	91.4	91.4
4000 Hz	80.5	82.6	82.5	82.5	83.9	83.8	83.8	83.8	83.8	83.8	83.8
8000 Hz	71.3	73.4	74.6	74.6	75.8	75.8	75.8	75.8	75.8	75.8	75.8
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>96.1</b>	<b>99.0</b>	<b>99.0</b>	<b>99.0</b>	<b>99.0</b>	<b>99.0</b>	<b>99.0</b>	<b>99.0</b>	<b>99.0</b>	<b>99.0</b>

**Mode 13**
**hub height 105 m – 98.5 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	68.1	69.8	69.8	70.2	70.1	70.1	70.1	70.1	70.1	70.1
63 Hz	77.1	78.1	79.8	79.8	80.3	80.2	80.2	80.2	80.2	80.2	80.2
125 Hz	83.7	84.7	86.4	86.4	86.4	86.4	86.4	86.4	86.4	86.4	86.4
250 Hz	86.6	87.6	90.1	90.1	90.1	90.1	90.1	90.1	90.1	90.1	90.1
500 Hz	87.6	88.6	92.2	92.2	92.7	92.7	92.7	92.7	92.7	92.7	92.7
1000 Hz	88.0	89.0	93.5	93.5	93.4	93.4	93.4	93.4	93.4	93.4	93.4
2000 Hz	86.2	87.2	91.6	91.6	90.9	90.9	90.9	90.9	90.9	90.9	90.9
4000 Hz	80.5	81.5	82.0	82.0	83.4	83.3	83.3	83.3	83.3	83.3	83.3
8000 Hz	71.3	72.3	74.1	74.1	75.3	75.3	75.3	75.3	75.3	75.3	75.3
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.0</b>	<b>98.5</b>	<b>98.5</b>	<b>98.5</b>	<b>98.5</b>	<b>98.5</b>	<b>98.5</b>	<b>98.5</b>	<b>98.5</b>	<b>98.5</b>

**hub height 125 m – 98.5 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	68.5	69.8	69.8	70.2	70.1	70.1	70.1	70.1	70.1	70.1
63 Hz	77.1	78.5	79.8	79.8	80.3	80.2	80.2	80.2	80.2	80.2	80.2
125 Hz	83.7	85.1	86.4	86.4	86.4	86.4	86.4	86.4	86.4	86.4	86.4
250 Hz	86.6	88.0	90.1	90.1	90.1	90.1	90.1	90.1	90.1	90.1	90.1
500 Hz	87.6	89.0	92.2	92.2	92.7	92.7	92.7	92.7	92.7	92.7	92.7
1000 Hz	88.0	89.4	93.5	93.5	93.4	93.4	93.4	93.4	93.4	93.4	93.4
2000 Hz	86.2	87.6	91.6	91.6	90.9	90.9	90.9	90.9	90.9	90.9	90.9
4000 Hz	80.5	81.9	82.0	82.0	83.4	83.3	83.3	83.3	83.3	83.3	83.3
8000 Hz	71.3	72.7	74.1	74.1	75.3	75.3	75.3	75.3	75.3	75.3	75.3
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.4</b>	<b>98.5</b>	<b>98.5</b>	<b>98.5</b>	<b>98.5</b>	<b>98.5</b>	<b>98.5</b>	<b>98.5</b>	<b>98.5</b>	<b>98.5</b>

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Octave sound power levels with serrated trailing edge


**Mode 15**
**hub height 105 m – 97.5 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	68.1	68.8	68.8	69.2	69.1	69.1	69.1	69.1	69.1	69.1
63 Hz	77.1	78.1	78.8	78.8	79.3	79.2	79.2	79.2	79.2	79.2	79.2
125 Hz	83.7	84.7	85.4	85.4	85.4	85.4	85.4	85.4	85.4	85.4	85.4
250 Hz	86.6	87.6	89.1	89.1	89.1	89.1	89.1	89.1	89.1	89.1	89.1
500 Hz	87.6	88.6	91.2	91.2	91.7	91.7	91.7	91.7	91.7	91.7	91.7
1000 Hz	88.0	89.0	92.5	92.5	92.4	92.4	92.4	92.4	92.4	92.4	92.4
2000 Hz	86.2	87.2	90.6	90.6	89.9	89.9	89.9	89.9	89.9	89.9	89.9
4000 Hz	80.5	81.5	81.0	81.0	82.4	82.3	82.3	82.3	82.3	82.3	82.3
8000 Hz	71.3	72.3	73.1	73.1	74.3	74.3	74.3	74.3	74.3	74.3	74.3
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.0</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>

**hub height 125 m – 97.5 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	68.5	68.8	68.8	69.2	69.1	69.1	69.1	69.1	69.1	69.1
63 Hz	77.1	78.5	78.8	78.8	79.3	79.2	79.2	79.2	79.2	79.2	79.2
125 Hz	83.7	85.1	85.4	85.4	85.4	85.4	85.4	85.4	85.4	85.4	85.4
250 Hz	86.6	88.0	89.1	89.1	89.1	89.1	89.1	89.1	89.1	89.1	89.1
500 Hz	87.6	89.0	91.2	91.2	91.7	91.7	91.7	91.7	91.7	91.7	91.7
1000 Hz	88.0	89.4	92.5	92.5	92.4	92.4	92.4	92.4	92.4	92.4	92.4
2000 Hz	86.2	87.6	90.6	90.6	89.9	89.9	89.9	89.9	89.9	89.9	89.9
4000 Hz	80.5	81.9	81.0	81.0	82.4	82.3	82.3	82.3	82.3	82.3	82.3
8000 Hz	71.3	72.7	73.1	73.1	74.3	74.3	74.3	74.3	74.3	74.3	74.3
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.4</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>

**hub height 145 m – 97.5 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	68.9	68.8	68.8	69.2	69.1	69.1	69.1	69.1	69.1	69.1
63 Hz	77.1	78.9	78.8	78.8	79.3	79.2	79.2	79.2	79.2	79.2	79.2
125 Hz	83.7	85.5	85.4	85.4	85.4	85.4	85.4	85.4	85.4	85.4	85.4
250 Hz	86.6	88.4	89.1	89.1	89.1	89.1	89.1	89.1	89.1	89.1	89.1
500 Hz	87.6	89.4	91.2	91.2	91.7	91.7	91.7	91.7	91.7	91.7	91.7
1000 Hz	88.0	89.8	92.5	92.5	92.4	92.4	92.4	92.4	92.4	92.4	92.4
2000 Hz	86.2	88.0	90.6	90.6	89.9	89.9	89.9	89.9	89.9	89.9	89.9
4000 Hz	80.5	82.3	81.0	81.0	82.4	82.3	82.3	82.3	82.3	82.3	82.3
8000 Hz	71.3	73.1	73.1	73.1	74.3	74.3	74.3	74.3	74.3	74.3	74.3
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.8</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>	<b>97.5</b>

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Certificats d'émission sonore de l'aérogénérateur Nordex N149 4.5MW, Mode 15 « 97.5dB(A) »



Octave sound power levels with serrated trailing edge


**hub height 145 m – 97.0 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	68.9	68.3	68.3	68.7	68.6	68.6	68.6	68.6	68.6	68.6
63 Hz	77.1	78.9	78.3	78.3	78.8	78.7	78.7	78.7	78.7	78.7	78.7
125 Hz	83.7	85.5	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9
250 Hz	86.6	88.4	88.6	88.6	88.6	88.6	88.6	88.6	88.6	88.6	88.6
500 Hz	87.6	89.4	90.7	90.7	91.2	91.2	91.2	91.2	91.2	91.2	91.2
1000 Hz	88.0	89.8	92.0	92.0	91.9	91.9	91.9	91.9	91.9	91.9	91.9
2000 Hz	86.2	88.0	90.1	90.1	89.4	89.4	89.4	89.4	89.4	89.4	89.4
4000 Hz	80.5	82.3	80.5	80.5	81.9	81.8	81.8	81.8	81.8	81.8	81.8
8000 Hz	71.3	73.1	72.6	72.6	73.8	73.8	73.8	73.8	73.8	73.8	73.8
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.8</b>	<b>97.0</b>	<b>97.0</b>	<b>97.0</b>	<b>97.0</b>	<b>97.0</b>	<b>97.0</b>	<b>97.0</b>	<b>97.0</b>	<b>97.0</b>

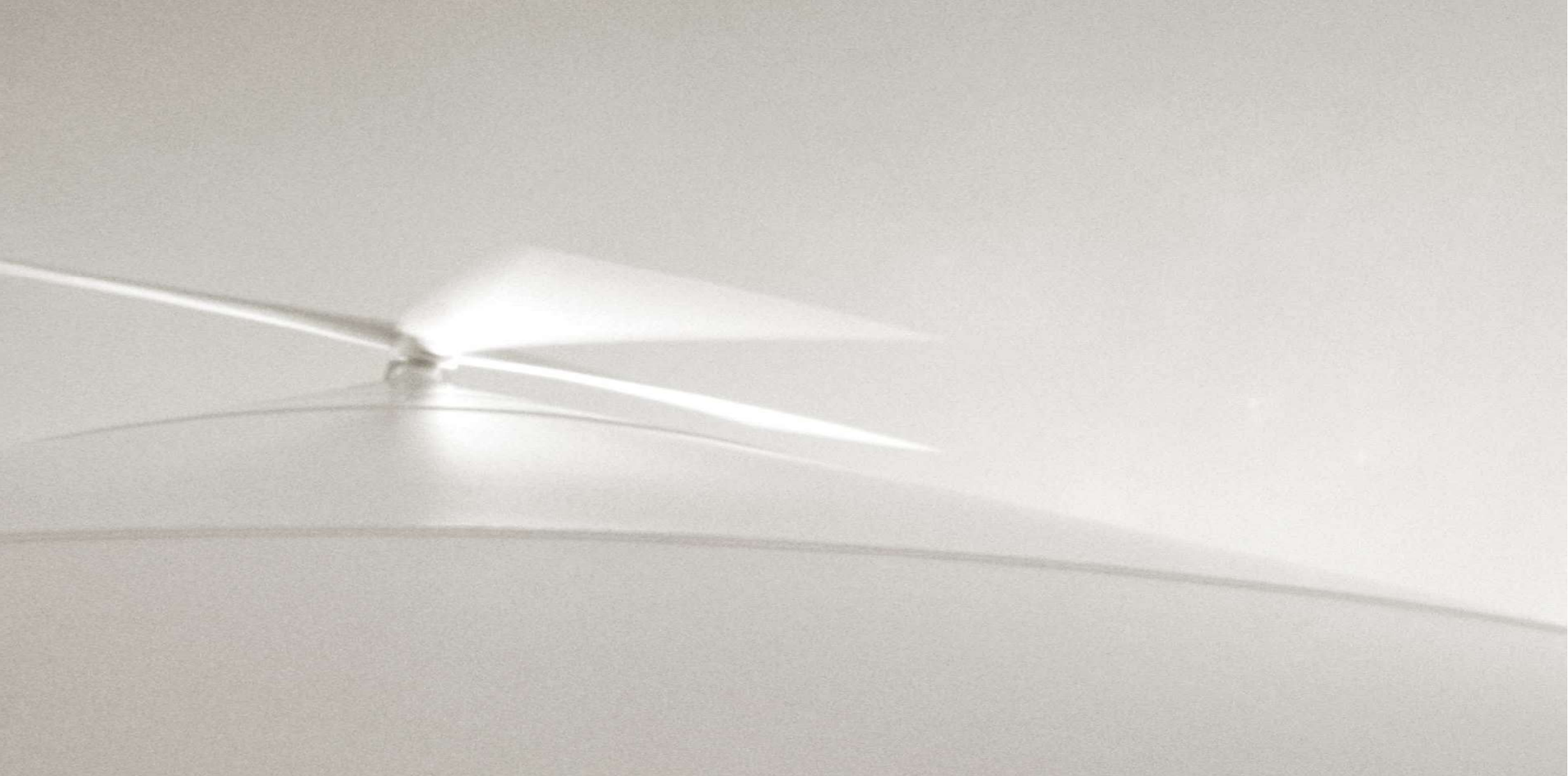
**hub height 164 m – 97.0 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	69.0	68.3	68.3	68.7	68.6	68.6	68.6	68.6	68.6	68.6
63 Hz	77.1	79.0	78.3	78.3	78.8	78.7	78.7	78.7	78.7	78.7	78.7
125 Hz	83.7	85.6	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9	84.9
250 Hz	86.6	88.5	88.6	88.6	88.6	88.6	88.6	88.6	88.6	88.6	88.6
500 Hz	87.6	89.5	90.7	90.7	91.2	91.2	91.2	91.2	91.2	91.2	91.2
1000 Hz	88.0	89.9	92.0	92.0	91.9	91.9	91.9	91.9	91.9	91.9	91.9
2000 Hz	86.2	88.1	90.1	90.1	89.4	89.4	89.4	89.4	89.4	89.4	89.4
4000 Hz	80.5	82.4	80.5	80.5	81.9	81.8	81.8	81.8	81.8	81.8	81.8
8000 Hz	71.3	73.2	72.6	72.6	73.8	73.8	73.8	73.8	73.8	73.8	73.8
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.9</b>	<b>97.0</b>	<b>97.0</b>	<b>97.0</b>	<b>97.0</b>	<b>97.0</b>	<b>97.0</b>	<b>97.0</b>	<b>97.0</b>	<b>97.0</b>

**Mode 17**
**hub height 105 m – 96.5 dB(A)**

octave sound power levels [dB(A)] at standardized wind speeds $v_s$											
Frequency	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	
31.5 Hz	67.1	68.1	67.8	67.8	69.2	68.1	68.1	68.1	68.1	68.1	68.1
63 Hz	77.1	78.1	77.8	77.8	79.3	78.2	78.2	78.2	78.2	78.2	78.2
125 Hz	83.7	84.7	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4
250 Hz	86.6	87.6	88.1	88.1	88.1	88.1	88.1	88.1	88.1	88.1	88.1
500 Hz	87.6	88.6	90.2	90.2	90.7	90.7	90.7	90.7	90.7	90.7	90.7
1000 Hz	88.0	89.0	91.5	91.5	91.4	91.4	91.4	91.4	91.4	91.4	91.4
2000 Hz	86.2	87.2	89.6	89.6	88.9	88.9	88.9	88.9	88.9	88.9	88.9
4000 Hz	80.5	81.5	80.0	80.0	81.4	81.3	81.3	81.3	81.3	81.3	81.3
8000 Hz	71.3	72.3	72.1	72.1	73.3	73.3	73.3	73.3	73.3	73.3	73.3
<b>Total sound power level [dB(A)]</b>	<b>94.0</b>	<b>95.0</b>	<b>96.5</b>	<b>96.5</b>	<b>96.5</b>	<b>96.5</b>	<b>96.5</b>	<b>96.5</b>	<b>96.5</b>	<b>96.5</b>	<b>96.5</b>





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