

Project:

Tuomiperä

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30.9.2013 10:29 / 1

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Calculated:

30.9.2013 10:25/2.8.579



## DECIBEL - Main Result

Calculation: N117-3000 x 9 x HH141 (GF=0,4)

### Noise calculation model:

ISO 9613-2 General

### Wind speed:

8,0 m/s

### Ground attenuation:

General, Ground factor: 0,4

### Meteorological coefficient, C0:

0,0 dB

### Type of demand in calculation:

1: WTG noise is compared to demand (DK, DE, SE, NL etc.)

### Noise values in calculation:

All noise values are mean values (Lwa) (Normal)

### Pure tones:

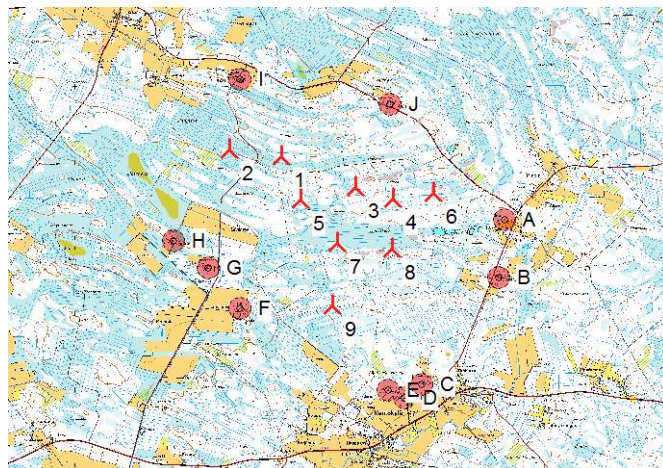
Pure and Impulse tone penalty are added to WTG source noise

### Height above ground level, when no value in NSA object:

4,0 m Allow override of model height with height from NSA object

Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:

0,0 dB(A)



New WTG

Noise sensitive area

## WTGs

	Finish TM ETRS-TM35FIN-ETRS89				WTG type			Noise data				Wind speed [m/s]	Lwa,ref [dB(A)]	Pure tones	
	East	North	Z [m]	Row data/Description	Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Creator				Name
1	392 723	7 111 083	82,5	YP2-T1	Yes	NORDEX	N117/3000-3 000	3 000	116,8	140,6	EMD	Level 0 - official - 106,0 dB(A) - R00	8,0	106,0	0 dB h
2	392 032	7 111 173	80,0	YP2-T2	Yes	NORDEX	N117/3000-3 000	3 000	116,8	140,6	EMD	Level 0 - official - 106,0 dB(A) - R00	8,0	106,0	0 dB h
3	393 701	7 110 679	85,0	YP2-T3	Yes	NORDEX	N117/3000-3 000	3 000	116,8	140,6	EMD	Level 0 - official - 106,0 dB(A) - R00	8,0	106,0	0 dB h
4	394 202	7 110 527	88,4	YP2-T4	Yes	NORDEX	N117/3000-3 000	3 000	116,8	140,6	EMD	Level 0 - official - 106,0 dB(A) - R00	8,0	106,0	0 dB h
5	392 983	7 110 506	83,5	YP2-T5	Yes	NORDEX	N117/3000-3 000	3 000	116,8	140,6	EMD	Level 0 - official - 106,0 dB(A) - R00	8,0	106,0	0 dB h
6	394 729	7 110 594	89,7	YP2-T6	Yes	NORDEX	N117/3000-3 000	3 000	116,8	140,6	EMD	Level 0 - official - 106,0 dB(A) - R00	8,0	106,0	0 dB h
7	393 458	7 109 936	83,8	YP2-T7	Yes	NORDEX	N117/3000-3 000	3 000	116,8	140,6	EMD	Level 0 - official - 106,0 dB(A) - R00	8,0	106,0	0 dB h
8	394 188	7 109 857	85,0	YP2-T8	Yes	NORDEX	N117/3000-3 000	3 000	116,8	140,6	EMD	Level 0 - official - 106,0 dB(A) - R00	8,0	106,0	0 dB h
9	393 403	7 109 108	84,1	YP2-T9	Yes	NORDEX	N117/3000-3 000	3 000	116,8	140,6	EMD	Level 0 - official - 106,0 dB(A) - R00	8,0	106,0	0 dB h

h) Generic octave distribution used

## Calculation Results

### Sound Level

Noise sensitive area No.	Name	Finish TM ETRS-TM35FIN-ETRS89			Imission height [m]	Demands Noise [dB(A)]	Sound Level From WTGs [dB(A)]	Demands fulfilled ? Noise
		East	North	Z [m]				
A	Asuinrakennus (Pinolantie 266)	395 675	7 110 246	87,5	4,0	40,0	36,9	Yes
B	Hoitokoti (Pinolantie 189)	395 590	7 109 486	85,0	4,0	40,0	35,5	Yes
C	Asuinrakennus (Männikkötie 33)	394 575	7 108 070	83,0	4,0	40,0	33,6	Yes
D	Kantokylän kylätalo (Vanhakouluntie 36)	394 348	7 107 888	81,9	4,0	40,0	33,2	Yes
E	Asuinrakennus (Vanhakouluntie 65)	394 131	7 107 990	82,8	4,0	40,0	34,3	Yes
F	Asuinrakennus (Levänevantie 227)	392 179	7 109 070	80,0	4,0	40,0	36,3	Yes
G	Asuinrakennus (Levänevantie 286)	391 760	7 109 605	80,0	4,0	40,0	35,9	Yes
H	Asuinrakennus (Kivinevantie 75)	391 299	7 109 963	80,0	4,0	40,0	34,8	Yes
I	Asuinrakennus (Levänevantie 441)	392 180	7 112 098	80,0	4,0	40,0	37,6	Yes
J	Asuinrakennus (Tuomiperäntie 656)	394 165	7 111 764	85,8	4,0	40,0	38,1	Yes

### Distances (m)

NSA	WTG								
	1	2	3	4	5	6	7	8	9
A	3068	3759	2021	1499	2704	1008	2238	1537	2541
B	3282	3938	2234	1735	2800	1403	2179	1451	2220
C	3536	4011	2751	2485	2910	2528	2174	1828	1565
D	3585	4019	2865	2643	2953	2733	2233	1976	1543
E	3398	3813	2723	2538	2765	2672	2059	1868	1334
F	2085	2108	2215	2493	1646	2971	1544	2158	1225
G	1764	1592	2219	2611	1519	3130	1730	2441	1717
H	1812	1415	2507	2957	1770	3488	2159	2891	2271

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**DECIBEL - Main Result****Calculation:** N117-3000 x 9 x HH141 (GF=0,4)

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**WTG**

NSA	1	2	3	4	5	6	7	8	9
I	1152	937	2081	2561	1783	2960	2512	3009	3231
J	1595	2213	1180	1237	1726	1299	1960	1907	2763

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SUUNNITTELU JA TEKNIikka

## DECIBEL - Detailed results

Calculation: N117-3000 x 9 x HH141 (GF=0,4) Noise calculation model: ISO 9613-2 General 8,0 m/s

### Assumptions

Calculated L(DW) = LWA,ref + K + Dc - (Adiv + Aatm + Agr + Abar + Amisc) - Cmet  
(when calculated with ground attenuation, then Dc = Domega)

LWA,ref:	Sound pressure level at WTG
K:	Pure tone
Dc:	Directivity correction
Adiv:	the attenuation due to geometrical divergence
Aatm:	the attenuation due to atmospheric absorption
Agr:	the attenuation due to ground effect
Abar:	the attenuation due to a barrier
Amisc:	the attenuation due to miscellaneous other effects
Cmet:	Meteorological correction

### Calculation Results

#### Noise sensitive area: A Asuinrakennus (Pinolantie 266)

WTG

Wind speed: 8,0 m/s

No.	Distance [m]	Sound distance [m]	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]	Cmet [dB]
1	3 068	3 071	<b>20,38</b>	106,0	0,00	80,75	-	-	0,00	0,00	-	0,00
2	3 759	3 761	<b>17,71</b>	106,0	0,00	82,51	-	-	0,00	0,00	-	0,00
3	2 021	2 025	<b>25,59</b>	106,0	0,00	77,13	-	-	0,00	0,00	-	0,00
4	1 499	1 506	<b>29,09</b>	106,0	0,00	74,55	-	-	0,00	0,00	-	0,00
5	2 704	2 708	<b>21,99</b>	106,0	0,00	79,65	-	-	0,00	0,00	-	0,00
6	1 008	1 017	<b>33,48</b>	106,0	0,00	71,15	-	-	0,00	0,00	-	0,00
7	2 238	2 242	<b>24,35</b>	106,0	0,00	78,01	-	-	0,00	0,00	-	0,00
8	1 537	1 543	<b>28,81</b>	106,0	0,00	74,77	-	-	0,00	0,00	-	0,00
9	2 541	2 544	<b>22,78</b>	106,0	0,00	79,11	-	-	0,00	0,00	-	0,00

Sum 36,94

- Data undefined due to calculation with octave data

#### Noise sensitive area: B Hoitokoti (Pinolantie 189)

WTG

Wind speed: 8,0 m/s

No.	Distance [m]	Sound distance [m]	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]	Cmet [dB]
1	3 282	3 285	<b>19,50</b>	106,0	0,00	81,33	-	-	0,00	0,00	-	0,00
2	3 938	3 940	<b>17,08</b>	106,0	0,00	82,91	-	-	0,00	0,00	-	0,00
3	2 234	2 239	<b>24,37</b>	106,0	0,00	78,00	-	-	0,00	0,00	-	0,00
4	1 735	1 741	<b>27,40</b>	106,0	0,00	75,81	-	-	0,00	0,00	-	0,00
5	2 800	2 803	<b>21,55</b>	106,0	0,00	79,95	-	-	0,00	0,00	-	0,00
6	1 403	1 410	<b>29,84</b>	106,0	0,00	73,99	-	-	0,00	0,00	-	0,00
7	2 179	2 183	<b>24,67</b>	106,0	0,00	77,78	-	-	0,00	0,00	-	0,00
8	1 451	1 457	<b>29,47</b>	106,0	0,00	74,27	-	-	0,00	0,00	-	0,00
9	2 220	2 224	<b>24,45</b>	106,0	0,00	77,94	-	-	0,00	0,00	-	0,00

Sum 35,47

- Data undefined due to calculation with octave data

#### Noise sensitive area: C Asuinrakennus (Männikkötie 33)

WTG

Wind speed: 8,0 m/s

No.	Distance [m]	Sound distance [m]	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]	Cmet [dB]
1	3 536	3 539	<b>18,52</b>	106,0	0,00	81,98	-	-	0,00	0,00	-	0,00
2	4 011	4 014	<b>16,83</b>	106,0	0,00	83,07	-	-	0,00	0,00	-	0,00
3	2 751	2 754	<b>21,77</b>	106,0	0,00	79,80	-	-	0,00	0,00	-	0,00
4	2 485	2 489	<b>23,06</b>	106,0	0,00	78,92	-	-	0,00	0,00	-	0,00
5	2 910	2 913	<b>21,06</b>	106,0	0,00	80,29	-	-	0,00	0,00	-	0,00
6	2 528	2 532	<b>22,84</b>	106,0	0,00	79,07	-	-	0,00	0,00	-	0,00
7	2 174	2 179	<b>24,70</b>	106,0	0,00	77,76	-	-	0,00	0,00	-	0,00

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## DECIBEL - Detailed results

Calculation: N117-3000 x 9 x HH141 (GF=0,4) Noise calculation model: ISO 9613-2 General 8,0 m/s

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WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
8	1 828	1 833	<b>26,78</b>	106,0	0,00	76,26	-	-	0,00	0,00	-	0,00
9	1 565	1 571	<b>28,60</b>	106,0	0,00	74,92	-	-	0,00	0,00	-	0,00
Sum	33,59											

- Data undefined due to calculation with octave data

### Noise sensitive area: D Kantokylän kylätalo (Vanhakouluntie 36)

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	3 585	3 587	<b>18,34</b>	106,0	0,00	82,10	-	-	0,00	0,00	-	0,00
2	4 019	4 022	<b>16,81</b>	106,0	0,00	83,09	-	-	0,00	0,00	-	0,00
3	2 865	2 869	<b>21,26</b>	106,0	0,00	80,15	-	-	0,00	0,00	-	0,00
4	2 643	2 647	<b>22,28</b>	106,0	0,00	79,46	-	-	0,00	0,00	-	0,00
5	2 953	2 956	<b>20,87</b>	106,0	0,00	80,41	-	-	0,00	0,00	-	0,00
6	2 733	2 737	<b>21,86</b>	106,0	0,00	79,74	-	-	0,00	0,00	-	0,00
7	2 233	2 237	<b>24,38</b>	106,0	0,00	77,99	-	-	0,00	0,00	-	0,00
8	1 976	1 981	<b>25,86</b>	106,0	0,00	76,94	-	-	0,00	0,00	-	0,00
9	1 543	1 549	<b>28,76</b>	106,0	0,00	74,80	-	-	0,00	0,00	-	0,00
Sum	33,23											

- Data undefined due to calculation with octave data

### Noise sensitive area: E Asuinrakennus (Vanhakouluntie 65)

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	3 398	3 401	<b>19,04</b>	106,0	0,00	81,63	-	-	0,00	0,00	-	0,00
2	3 813	3 815	<b>17,52</b>	106,0	0,00	82,63	-	-	0,00	0,00	-	0,00
3	2 723	2 727	<b>21,90</b>	106,0	0,00	79,71	-	-	0,00	0,00	-	0,00
4	2 538	2 542	<b>22,79</b>	106,0	0,00	79,10	-	-	0,00	0,00	-	0,00
5	2 765	2 769	<b>21,71</b>	106,0	0,00	79,85	-	-	0,00	0,00	-	0,00
6	2 672	2 676	<b>22,14</b>	106,0	0,00	79,55	-	-	0,00	0,00	-	0,00
7	2 059	2 063	<b>25,36</b>	106,0	0,00	77,29	-	-	0,00	0,00	-	0,00
8	1 868	1 873	<b>26,53</b>	106,0	0,00	76,45	-	-	0,00	0,00	-	0,00
9	1 334	1 341	<b>30,41</b>	106,0	0,00	73,55	-	-	0,00	0,00	-	0,00
Sum	34,29											

- Data undefined due to calculation with octave data

### Noise sensitive area: F Asuinrakennus (Levänevantie 227)

WTG		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	2 085	2 090	<b>25,21</b>	106,0	0,00	77,40	-	-	0,00	0,00	-	0,00
2	2 108	2 112	<b>25,08</b>	106,0	0,00	77,49	-	-	0,00	0,00	-	0,00
3	2 215	2 219	<b>24,48</b>	106,0	0,00	77,92	-	-	0,00	0,00	-	0,00
4	2 493	2 497	<b>23,01</b>	106,0	0,00	78,95	-	-	0,00	0,00	-	0,00
5	1 646	1 651	<b>28,01</b>	106,0	0,00	75,36	-	-	0,00	0,00	-	0,00
6	2 971	2 974	<b>20,79</b>	106,0	0,00	80,47	-	-	0,00	0,00	-	0,00
7	1 544	1 551	<b>28,75</b>	106,0	0,00	74,81	-	-	0,00	0,00	-	0,00
8	2 158	2 162	<b>24,79</b>	106,0	0,00	77,70	-	-	0,00	0,00	-	0,00
9	1 225	1 233	<b>31,36</b>	106,0	0,00	72,82	-	-	0,00	0,00	-	0,00
Sum	36,34											

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**DECIBEL - Detailed results****Calculation: N117-3000 x 9 x HH141 (GF=0,4) Noise calculation model: ISO 9613-2 General 8,0 m/s****Noise sensitive area: G Asuinrakennus (Levänevantie 286)**

WTG		Wind speed: 8,0 m/s										
No.	Distance [m]	Sound distance [m]	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]	Cmet [dB]
1	1 764	1 770	<b>27,20</b>	106,0	0,00	75,96	-	-	0,00	0,00	-	0,00
2	1 592	1 598	<b>28,40</b>	106,0	0,00	75,07	-	-	0,00	0,00	-	0,00
3	2 219	2 223	<b>24,45</b>	106,0	0,00	77,94	-	-	0,00	0,00	-	0,00
4	2 611	2 615	<b>22,44</b>	106,0	0,00	79,35	-	-	0,00	0,00	-	0,00
5	1 519	1 526	<b>28,93</b>	106,0	0,00	74,67	-	-	0,00	0,00	-	0,00
6	3 130	3 133	<b>20,12</b>	106,0	0,00	80,92	-	-	0,00	0,00	-	0,00
7	1 730	1 736	<b>27,43</b>	106,0	0,00	75,79	-	-	0,00	0,00	-	0,00
8	2 441	2 445	<b>23,28</b>	106,0	0,00	78,77	-	-	0,00	0,00	-	0,00
9	1 717	1 722	<b>27,52</b>	106,0	0,00	75,72	-	-	0,00	0,00	-	0,00

Sum 35,90

- Data undefined due to calculation with octave data

**Noise sensitive area: H Asuinrakennus (Kivinevantie 75)**

WTG		Wind speed: 8,0 m/s										
No.	Distance [m]	Sound distance [m]	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]	Cmet [dB]
1	1 812	1 817	<b>26,89</b>	106,0	0,00	76,19	-	-	0,00	0,00	-	0,00
2	1 415	1 421	<b>29,75</b>	106,0	0,00	74,05	-	-	0,00	0,00	-	0,00
3	2 507	2 511	<b>22,95</b>	106,0	0,00	79,00	-	-	0,00	0,00	-	0,00
4	2 957	2 961	<b>20,85</b>	106,0	0,00	80,43	-	-	0,00	0,00	-	0,00
5	1 770	1 775	<b>27,17</b>	106,0	0,00	75,98	-	-	0,00	0,00	-	0,00
6	3 488	3 491	<b>18,70</b>	106,0	0,00	81,86	-	-	0,00	0,00	-	0,00
7	2 159	2 164	<b>24,78</b>	106,0	0,00	77,70	-	-	0,00	0,00	-	0,00
8	2 891	2 895	<b>21,14</b>	106,0	0,00	80,23	-	-	0,00	0,00	-	0,00
9	2 271	2 276	<b>24,17</b>	106,0	0,00	78,14	-	-	0,00	0,00	-	0,00

Sum 34,82

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**Noise sensitive area: I Asuinrakennus (Levänevantie 441)**

WTG		Wind speed: 8,0 m/s										
No.	Distance [m]	Sound distance [m]	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]	Cmet [dB]
1	1 152	1 160	<b>32,04</b>	106,0	0,00	72,29	-	-	0,00	0,00	-	0,00
2	937	947	<b>34,26</b>	106,0	0,00	70,53	-	-	0,00	0,00	-	0,00
3	2 081	2 085	<b>25,24</b>	106,0	0,00	77,38	-	-	0,00	0,00	-	0,00
4	2 561	2 565	<b>22,68</b>	106,0	0,00	79,18	-	-	0,00	0,00	-	0,00
5	1 783	1 789	<b>27,07</b>	106,0	0,00	76,05	-	-	0,00	0,00	-	0,00
6	2 960	2 964	<b>20,84</b>	106,0	0,00	80,44	-	-	0,00	0,00	-	0,00
7	2 512	2 516	<b>22,92</b>	106,0	0,00	79,01	-	-	0,00	0,00	-	0,00
8	3 009	3 013	<b>20,63</b>	106,0	0,00	80,58	-	-	0,00	0,00	-	0,00
9	3 231	3 234	<b>19,70</b>	106,0	0,00	81,19	-	-	0,00	0,00	-	0,00

Sum 37,65

- Data undefined due to calculation with octave data

**Noise sensitive area: J Asuinrakennus (Tuomiperäntie 656)**

WTG		Wind speed: 8,0 m/s										
No.	Distance [m]	Sound distance [m]	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]	Cmet [dB]
1	1 595	1 600	<b>28,38</b>	106,0	0,00	75,08	-	-	0,00	0,00	-	0,00
2	2 213	2 217	<b>24,49</b>	106,0	0,00	77,92	-	-	0,00	0,00	-	0,00
3	1 180	1 187	<b>31,77</b>	106,0	0,00	72,49	-	-	0,00	0,00	-	0,00
4	1 237	1 245	<b>31,25</b>	106,0	0,00	72,90	-	-	0,00	0,00	-	0,00
5	1 726	1 731	<b>27,46</b>	106,0	0,00	75,77	-	-	0,00	0,00	-	0,00
6	1 299	1 306	<b>30,71</b>	106,0	0,00	73,32	-	-	0,00	0,00	-	0,00
7	1 960	1 964	<b>25,96</b>	106,0	0,00	76,86	-	-	0,00	0,00	-	0,00
8	1 907	1 912	<b>26,28</b>	106,0	0,00	76,63	-	-	0,00	0,00	-	0,00
9	2 763	2 766	<b>21,72</b>	106,0	0,00	79,84	-	-	0,00	0,00	-	0,00

Sum 38,14

- Data undefined due to calculation with octave data

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## DECIBEL - Assumptions for noise calculation

**Calculation:** N117-3000 x 9 x HH141 (GF=0,4) **Noise calculation model:** ISO 9613-2 General 8,0 m/s

### Noise calculation model:

ISO 9613-2 General

### Wind speed:

8,0 m/s

### Ground attenuation:

General, Ground factor: 0,4

### Meteorological coefficient, C0:

0,0 dB

### Type of demand in calculation:

1: WTG noise is compared to demand (DK, DE, SE, NL etc.)

### Noise values in calculation:

All noise values are mean values (Lwa) (Normal)

### Pure tones:

Pure and Impulse tone penalty are added to WTG source noise

### Height above ground level, when no value in NSA object:

4,0 m Allow override of model height with height from NSA object

### Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:

0,0 dB(A)

### Octave data required

Air absorption

63	125	250	500	1 000	2 000	4 000	8 000
[db/km]	[db/km]	[db/km]	[db/km]	[db/km]	[db/km]	[db/km]	[db/km]
0,1	0,4	1,0	1,9	3,7	9,7	32,8	117,0

**WTG:** NORDEX N117/3000 3000 116.8 !O!

**Noise:** Level 0 - official - 106.0 dB(A) - R00

Source	Source/Date	Creator	Edited
NORDEX	9.1.2013	EMD	7.2.2013 10:36
F008_244_A03_R00,	24.10.2012		

Status	Hub height [m]	Wind speed [m/s]	LwA,ref [dB(A)]	Pure tones	Octave data								
					63 [dB]	125 [dB]	250 [dB]	500 [dB]	1000 [dB]	2000 [dB]	4000 [dB]	8000 [dB]	
From Windcat	140,6	8,0	106,0	No	Generic data	87,6	94,6	98,0	100,6	100,4	97,5	92,7	83,2

**NSA:** Asuinrakennus (Pinolantie 266)-A

### Predefined calculation standard:

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

**NSA:** Hoitokoti (Pinolantie 189)-B

### Predefined calculation standard:

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

**NSA:** Asuinrakennus (Männikkötie 33)-C

### Predefined calculation standard:

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

**NSA:** Kantokylän kylätalo (Vanhakouluntie 36)-D

### Predefined calculation standard:

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

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## DECIBEL - Assumptions for noise calculation

**Calculation:** N117-3000 x 9 x HH141 (GF=0,4) **Noise calculation model:** ISO 9613-2 General 8,0 m/s

**NSA:** Asuinrakennus (Vanhakouluntie 65)-E

**Predefined calculation standard:**

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

**NSA:** Asuinrakennus (Levänevantie 227)-F

**Predefined calculation standard:**

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

**NSA:** Asuinrakennus (Levänevantie 286)-G

**Predefined calculation standard:**

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

**NSA:** Asuinrakennus (Kivinevantie 75)-H

**Predefined calculation standard:**

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

**NSA:** Asuinrakennus (Levänevantie 441)-I

**Predefined calculation standard:**

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

**NSA:** Asuinrakennus (Tuomiperäntie 656)-J

**Predefined calculation standard:**

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

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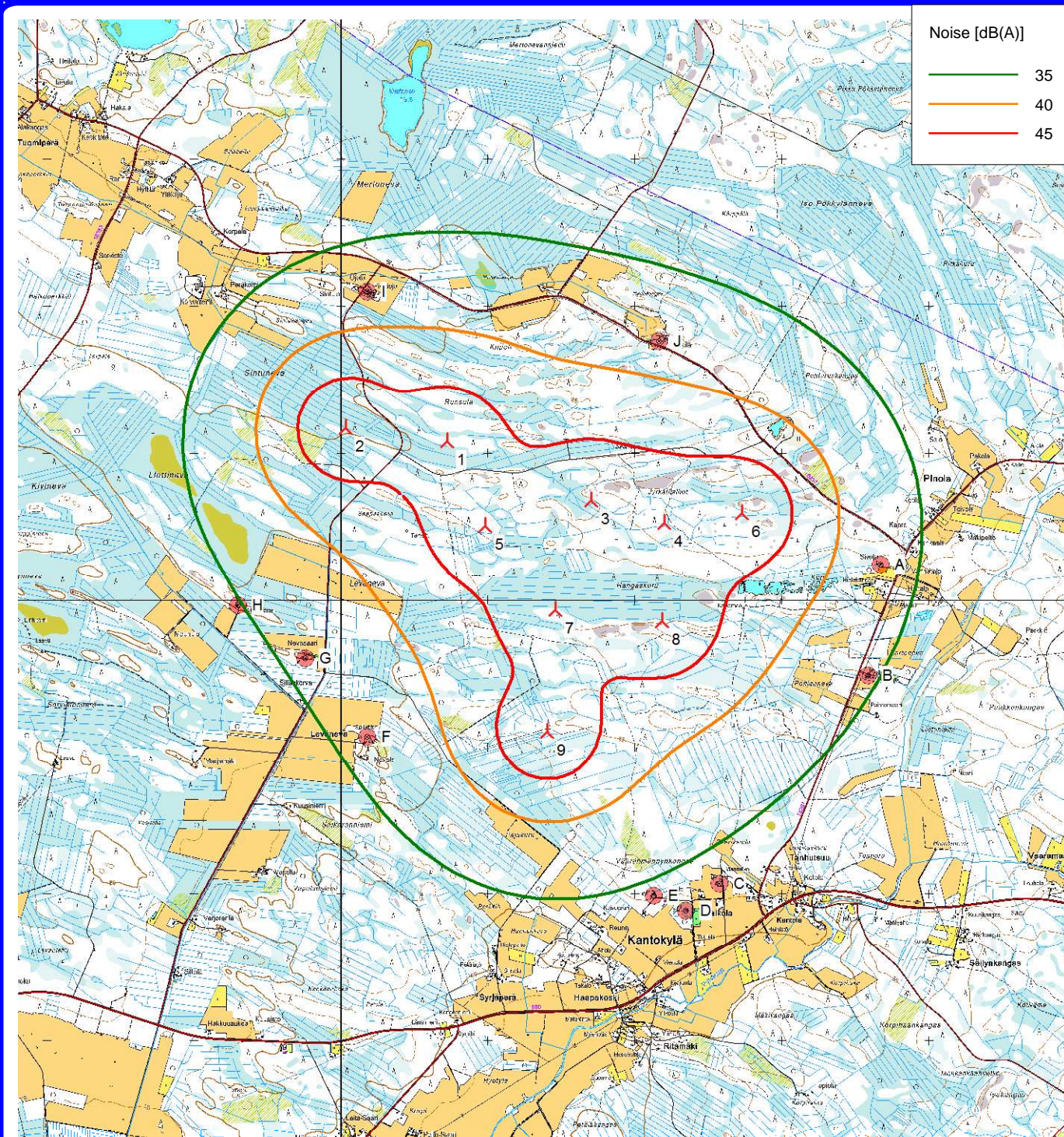
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**DECIBEL - Map 8,0 m/s**

Calculation: N117-3000 x 9 x HH141 (GF=0,4) Noise calculation model: ISO 9613-2 General 8,0 m/s



0 500 1000 1500 2000 m

Map: Peruskartat , Print scale 1:40 000, Map center Finish TM ETRS-TM35FIN-ETRS89 East: 393 381 North: 7 110 140

▲ New WTG

■ Noise sensitive area

Noise calculation model: ISO 9613-2 General. Wind speed: 8,0 m/s  
Height above sea level from active line object



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## DECIBEL - Main Result

Calculation: V126-3300 x 9 x HH137 (GF=0,4)

### Noise calculation model:

ISO 9613-2 General

### Wind speed:

8,0 m/s

### Ground attenuation:

General, Ground factor: 0,4

### Meteorological coefficient, C0:

0,0 dB

### Type of demand in calculation:

1: WTG noise is compared to demand (DK, DE, SE, NL etc.)

### Noise values in calculation:

All noise values are mean values (Lwa) (Normal)

### Pure tones:

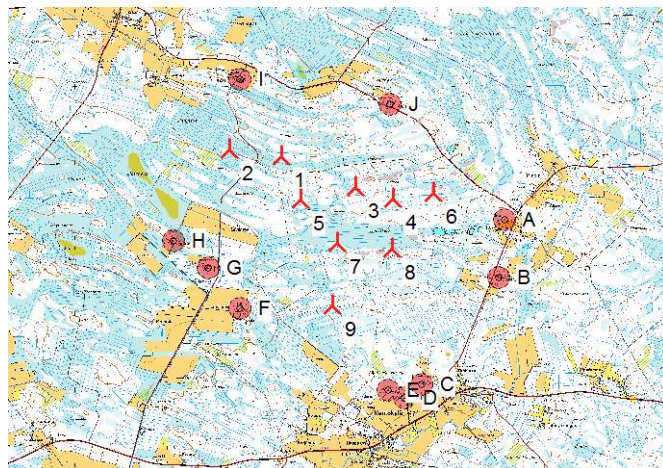
Pure and Impulse tone penalty are added to WTG source noise

### Height above ground level, when no value in NSA object:

4,0 m Allow override of model height with height from NSA object

Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:

0,0 dB(A)



New WTG

Noise sensitive area

## WTGs

	Finish TM ETRS-TM35FIN-ETRS89				WTG type		Noise data				Wind speed [m/s]	Lwa,ref [dB(A)]	Pure tones		
	East	North	Z	Row data/Description	Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]				Creator	Name
1	392 723	7 111 083	82,5	YP2-T1	Yes	VESTAS	V126-3 300	3 300	126,0	137,0	EMD	Level 0 - Estimated - Mode 0 - 01-2013	8,0	107,5	0 dB h
2	392 032	7 111 173	80,0	YP2-T2	Yes	VESTAS	V126-3 300	3 300	126,0	137,0	EMD	Level 0 - Estimated - Mode 0 - 01-2013	8,0	107,5	0 dB h
3	393 701	7 110 679	85,0	YP2-T3	Yes	VESTAS	V126-3 300	3 300	126,0	137,0	EMD	Level 0 - Estimated - Mode 0 - 01-2013	8,0	107,5	0 dB h
4	394 202	7 110 527	88,4	YP2-T4	Yes	VESTAS	V126-3 300	3 300	126,0	137,0	EMD	Level 0 - Estimated - Mode 0 - 01-2013	8,0	107,5	0 dB h
5	392 983	7 110 506	83,5	YP2-T5	Yes	VESTAS	V126-3 300	3 300	126,0	137,0	EMD	Level 0 - Estimated - Mode 0 - 01-2013	8,0	107,5	0 dB h
6	394 729	7 110 594	89,7	YP2-T6	Yes	VESTAS	V126-3 300	3 300	126,0	137,0	EMD	Level 0 - Estimated - Mode 0 - 01-2013	8,0	107,5	0 dB h
7	393 458	7 109 936	83,8	YP2-T7	Yes	VESTAS	V126-3 300	3 300	126,0	137,0	EMD	Level 0 - Estimated - Mode 0 - 01-2013	8,0	107,5	0 dB h
8	394 188	7 109 857	85,0	YP2-T8	Yes	VESTAS	V126-3 300	3 300	126,0	137,0	EMD	Level 0 - Estimated - Mode 0 - 01-2013	8,0	107,5	0 dB h
9	393 403	7 109 108	84,1	YP2-T9	Yes	VESTAS	V126-3 300	3 300	126,0	137,0	EMD	Level 0 - Estimated - Mode 0 - 01-2013	8,0	107,5	0 dB h

h) Generic octave distribution used

## Calculation Results

### Sound Level

Noise sensitive area No.	Name	Finish TM ETRS-TM35FIN-ETRS89			Imission height [m]	Demands Noise [dB(A)]	Sound Level From WTGs [dB(A)]	Demands fulfilled ? Noise
		East	North	Z [m]				
A	Asuinrakennus (Pinolantie 266)	395 675	7 110 246	87,5	4,0	40,0	38,4	Yes
B	Hoitokoti (Pinolantie 189)	395 590	7 109 486	85,0	4,0	40,0	37,0	Yes
C	Asuinrakennus (Männikkötie 33)	394 575	7 108 070	83,0	4,0	40,0	35,1	Yes
D	Kantokylän kylätalo (Vanhakouluntie 36)	394 348	7 107 888	81,9	4,0	40,0	34,7	Yes
E	Asuinrakennus (Vanhakouluntie 65)	394 131	7 107 990	82,8	4,0	40,0	35,8	Yes
F	Asuinrakennus (Levänevantie 227)	392 179	7 109 070	80,0	4,0	40,0	37,8	Yes
G	Asuinrakennus (Levänevantie 286)	391 760	7 109 605	80,0	4,0	40,0	37,4	Yes
H	Asuinrakennus (Kivinevantie 75)	391 299	7 109 963	80,0	4,0	40,0	36,3	Yes
I	Asuinrakennus (Levänevantie 441)	392 180	7 112 098	80,0	4,0	40,0	39,1	Yes
J	Asuinrakennus (Tuomiperäntie 656)	394 165	7 111 764	85,8	4,0	40,0	39,6	Yes

### Distances (m)

NSA	WTG								
	1	2	3	4	5	6	7	8	9
A	3068	3759	2021	1499	2704	1008	2238	1537	2541
B	3282	3938	2234	1735	2800	1403	2179	1451	2220
C	3536	4011	2751	2485	2910	2528	2174	1828	1565
D	3585	4019	2865	2643	2953	2733	2233	1976	1543
E	3398	3813	2723	2538	2765	2672	2059	1868	1334
F	2085	2108	2215	2493	1646	2971	1544	2158	1225
G	1764	1592	2219	2611	1519	3130	1730	2441	1717
H	1812	1415	2507	2957	1770	3488	2159	2891	2271

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**DECIBEL - Main Result****Calculation:** V126-3300 x 9 x HH137 (GF=0,4)

...continued from previous page

**WTG**

NSA	1	2	3	4	5	6	7	8	9
I	1152	937	2081	2561	1783	2960	2512	3009	3231
J	1595	2213	1180	1237	1726	1299	1960	1907	2763

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## DECIBEL - Detailed results

Calculation: V126-3300 x 9 x HH137 (GF=0,4) Noise calculation model: ISO 9613-2 General 8,0 m/s

### Assumptions

Calculated L(DW) = LWA,ref + K + Dc - (Adiv + Aatm + Agr + Abar + Amisc) - Cmet  
(when calculated with ground attenuation, then Dc = Domega)

LWA,ref:	Sound pressure level at WTG
K:	Pure tone
Dc:	Directivity correction
Adiv:	the attenuation due to geometrical divergence
Aatm:	the attenuation due to atmospheric absorption
Agr:	the attenuation due to ground effect
Abar:	the attenuation due to a barrier
Amisc:	the attenuation due to miscellaneous other effects
Cmet:	Meteorological correction

### Calculation Results

#### Noise sensitive area: A Asuinrakennus (Pinolantie 266)

WTG		Wind speed: 8,0 m/s										
No.	Distance [m]	Sound distance [m]	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]	Cmet [dB]
1	3 068	3 071	<b>21,88</b>	107,5	0,00	80,75	-	-	0,00	0,00	-	0,00
2	3 759	3 761	<b>19,21</b>	107,5	0,00	82,51	-	-	0,00	0,00	-	0,00
3	2 021	2 025	<b>27,09</b>	107,5	0,00	77,13	-	-	0,00	0,00	-	0,00
4	1 499	1 505	<b>30,59</b>	107,5	0,00	74,55	-	-	0,00	0,00	-	0,00
5	2 704	2 707	<b>23,49</b>	107,5	0,00	79,65	-	-	0,00	0,00	-	0,00
6	1 008	1 017	<b>34,98</b>	107,5	0,00	71,15	-	-	0,00	0,00	-	0,00
7	2 238	2 242	<b>25,85</b>	107,5	0,00	78,01	-	-	0,00	0,00	-	0,00
8	1 537	1 542	<b>30,31</b>	107,5	0,00	74,76	-	-	0,00	0,00	-	0,00
9	2 541	2 544	<b>24,28</b>	107,5	0,00	79,11	-	-	0,00	0,00	-	0,00
Sum	38,45											

- Data undefined due to calculation with octave data

#### Noise sensitive area: B Hoitokoti (Pinolantie 189)

WTG		Wind speed: 8,0 m/s										
No.	Distance [m]	Sound distance [m]	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]	Cmet [dB]
1	3 282	3 285	<b>21,00</b>	107,5	0,00	81,33	-	-	0,00	0,00	-	0,00
2	3 938	3 940	<b>18,58</b>	107,5	0,00	82,91	-	-	0,00	0,00	-	0,00
3	2 234	2 238	<b>25,87</b>	107,5	0,00	78,00	-	-	0,00	0,00	-	0,00
4	1 735	1 741	<b>28,90</b>	107,5	0,00	75,81	-	-	0,00	0,00	-	0,00
5	2 800	2 803	<b>23,05</b>	107,5	0,00	79,95	-	-	0,00	0,00	-	0,00
6	1 403	1 410	<b>31,34</b>	107,5	0,00	73,98	-	-	0,00	0,00	-	0,00
7	2 179	2 183	<b>26,17</b>	107,5	0,00	77,78	-	-	0,00	0,00	-	0,00
8	1 451	1 457	<b>30,97</b>	107,5	0,00	74,27	-	-	0,00	0,00	-	0,00
9	2 220	2 224	<b>25,95</b>	107,5	0,00	77,94	-	-	0,00	0,00	-	0,00
Sum	36,97											

- Data undefined due to calculation with octave data

#### Noise sensitive area: C Asuinrakennus (Männikkötie 33)

WTG		Wind speed: 8,0 m/s										
No.	Distance [m]	Sound distance [m]	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]	Cmet [dB]
1	3 536	3 539	<b>20,02</b>	107,5	0,00	81,98	-	-	0,00	0,00	-	0,00
2	4 011	4 014	<b>18,33</b>	107,5	0,00	83,07	-	-	0,00	0,00	-	0,00
3	2 751	2 754	<b>23,27</b>	107,5	0,00	79,80	-	-	0,00	0,00	-	0,00
4	2 485	2 489	<b>24,55</b>	107,5	0,00	78,92	-	-	0,00	0,00	-	0,00
5	2 910	2 913	<b>22,56</b>	107,5	0,00	80,29	-	-	0,00	0,00	-	0,00
6	2 528	2 532	<b>24,34</b>	107,5	0,00	79,07	-	-	0,00	0,00	-	0,00
7	2 174	2 178	<b>26,20</b>	107,5	0,00	77,76	-	-	0,00	0,00	-	0,00

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## DECIBEL - Detailed results

**Calculation: V126-3300 x 9 x HH137 (GF=0,4) Noise calculation model: ISO 9613-2 General 8,0 m/s**

...continued from previous page

		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
8	1 828	1 833	<b>28,28</b>	107,5	0,00	76,26	-	-	0,00	0,00	-	0,00
9	1 565	1 571	<b>30,10</b>	107,5	0,00	74,92	-	-	0,00	0,00	-	0,00
Sum	35,09											

- Data undefined due to calculation with octave data

### Noise sensitive area: D Kantokylän kylätalo (Vanhakouluntie 36)

		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	3 585	3 587	<b>19,84</b>	107,5	0,00	82,09	-	-	0,00	0,00	-	0,00
2	4 019	4 022	<b>18,31</b>	107,5	0,00	83,09	-	-	0,00	0,00	-	0,00
3	2 865	2 868	<b>22,76</b>	107,5	0,00	80,15	-	-	0,00	0,00	-	0,00
4	2 643	2 647	<b>23,78</b>	107,5	0,00	79,45	-	-	0,00	0,00	-	0,00
5	2 953	2 956	<b>22,37</b>	107,5	0,00	80,41	-	-	0,00	0,00	-	0,00
6	2 733	2 737	<b>23,36</b>	107,5	0,00	79,74	-	-	0,00	0,00	-	0,00
7	2 233	2 237	<b>25,88</b>	107,5	0,00	77,99	-	-	0,00	0,00	-	0,00
8	1 976	1 980	<b>27,36</b>	107,5	0,00	76,93	-	-	0,00	0,00	-	0,00
9	1 543	1 549	<b>30,26</b>	107,5	0,00	74,80	-	-	0,00	0,00	-	0,00
Sum	34,73											

- Data undefined due to calculation with octave data

### Noise sensitive area: E Asuinrakennus (Vanhakouluntie 65)

		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	3 398	3 401	<b>20,54</b>	107,5	0,00	81,63	-	-	0,00	0,00	-	0,00
2	3 813	3 815	<b>19,02</b>	107,5	0,00	82,63	-	-	0,00	0,00	-	0,00
3	2 723	2 726	<b>23,40</b>	107,5	0,00	79,71	-	-	0,00	0,00	-	0,00
4	2 538	2 542	<b>24,29</b>	107,5	0,00	79,10	-	-	0,00	0,00	-	0,00
5	2 765	2 769	<b>23,21</b>	107,5	0,00	79,84	-	-	0,00	0,00	-	0,00
6	2 672	2 675	<b>23,64</b>	107,5	0,00	79,55	-	-	0,00	0,00	-	0,00
7	2 059	2 063	<b>26,86</b>	107,5	0,00	77,29	-	-	0,00	0,00	-	0,00
8	1 868	1 873	<b>28,03</b>	107,5	0,00	76,45	-	-	0,00	0,00	-	0,00
9	1 334	1 341	<b>31,91</b>	107,5	0,00	73,55	-	-	0,00	0,00	-	0,00
Sum	35,79											

- Data undefined due to calculation with octave data

### Noise sensitive area: F Asuinrakennus (Levänevantie 227)

		Wind speed: 8,0 m/s										
No.	Distance	Sound distance	Calculated	LwA,ref	Dc	Adiv	Aatm	Agr	Abar	Amisc	A	Cmet
	[m]	[m]	[dB(A)]	[dB(A)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
1	2 085	2 089	<b>26,71</b>	107,5	0,00	77,40	-	-	0,00	0,00	-	0,00
2	2 108	2 112	<b>26,58</b>	107,5	0,00	77,49	-	-	0,00	0,00	-	0,00
3	2 215	2 219	<b>25,98</b>	107,5	0,00	77,92	-	-	0,00	0,00	-	0,00
4	2 493	2 497	<b>24,51</b>	107,5	0,00	78,95	-	-	0,00	0,00	-	0,00
5	1 646	1 651	<b>29,52</b>	107,5	0,00	75,36	-	-	0,00	0,00	-	0,00
6	2 971	2 974	<b>22,29</b>	107,5	0,00	80,47	-	-	0,00	0,00	-	0,00
7	1 544	1 551	<b>30,25</b>	107,5	0,00	74,81	-	-	0,00	0,00	-	0,00
8	2 158	2 162	<b>26,29</b>	107,5	0,00	77,70	-	-	0,00	0,00	-	0,00
9	1 225	1 232	<b>32,86</b>	107,5	0,00	72,81	-	-	0,00	0,00	-	0,00
Sum	37,84											

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Calculated:

30.9.2013 10:31/2.8.579

## DECIBEL - Detailed results

Calculation: V126-3300 x 9 x HH137 (GF=0,4) Noise calculation model: ISO 9613-2 General 8,0 m/s

### Noise sensitive area: G Asuinrakennus (Levänevantie 286)

WTG Wind speed: 8,0 m/s

No.	Distance [m]	Sound distance [m]	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]	Cmet [dB]
1	1 764	1 770	<b>28,70</b>	107,5	0,00	75,96	-	-	0,00	0,00	-	0,00
2	1 592	1 597	<b>29,90</b>	107,5	0,00	75,07	-	-	0,00	0,00	-	0,00
3	2 219	2 223	<b>25,95</b>	107,5	0,00	77,94	-	-	0,00	0,00	-	0,00
4	2 611	2 614	<b>23,94</b>	107,5	0,00	79,35	-	-	0,00	0,00	-	0,00
5	1 519	1 525	<b>30,43</b>	107,5	0,00	74,67	-	-	0,00	0,00	-	0,00
6	3 130	3 133	<b>21,62</b>	107,5	0,00	80,92	-	-	0,00	0,00	-	0,00
7	1 730	1 736	<b>28,93</b>	107,5	0,00	75,79	-	-	0,00	0,00	-	0,00
8	2 441	2 445	<b>24,77</b>	107,5	0,00	78,77	-	-	0,00	0,00	-	0,00
9	1 717	1 722	<b>29,02</b>	107,5	0,00	75,72	-	-	0,00	0,00	-	0,00

Sum 37,40

- Data undefined due to calculation with octave data

### Noise sensitive area: H Asuinrakennus (Kivinevantie 75)

WTG Wind speed: 8,0 m/s

No.	Distance [m]	Sound distance [m]	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]	Cmet [dB]
1	1 812	1 817	<b>28,39</b>	107,5	0,00	76,19	-	-	0,00	0,00	-	0,00
2	1 415	1 421	<b>31,25</b>	107,5	0,00	74,05	-	-	0,00	0,00	-	0,00
3	2 507	2 510	<b>24,45</b>	107,5	0,00	79,00	-	-	0,00	0,00	-	0,00
4	2 957	2 961	<b>22,35</b>	107,5	0,00	80,43	-	-	0,00	0,00	-	0,00
5	1 770	1 775	<b>28,67</b>	107,5	0,00	75,98	-	-	0,00	0,00	-	0,00
6	3 488	3 491	<b>20,20</b>	107,5	0,00	81,86	-	-	0,00	0,00	-	0,00
7	2 159	2 164	<b>26,28</b>	107,5	0,00	77,70	-	-	0,00	0,00	-	0,00
8	2 891	2 894	<b>22,64</b>	107,5	0,00	80,23	-	-	0,00	0,00	-	0,00
9	2 271	2 275	<b>25,67</b>	107,5	0,00	78,14	-	-	0,00	0,00	-	0,00

Sum 36,33

- Data undefined due to calculation with octave data

### Noise sensitive area: I Asuinrakennus (Levänevantie 441)

WTG Wind speed: 8,0 m/s

No.	Distance [m]	Sound distance [m]	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]	Cmet [dB]
1	1 152	1 160	<b>33,54</b>	107,5	0,00	72,29	-	-	0,00	0,00	-	0,00
2	937	947	<b>35,76</b>	107,5	0,00	70,52	-	-	0,00	0,00	-	0,00
3	2 081	2 085	<b>26,74</b>	107,5	0,00	77,38	-	-	0,00	0,00	-	0,00
4	2 561	2 565	<b>24,18</b>	107,5	0,00	79,18	-	-	0,00	0,00	-	0,00
5	1 783	1 789	<b>28,57</b>	107,5	0,00	76,05	-	-	0,00	0,00	-	0,00
6	2 960	2 963	<b>22,34</b>	107,5	0,00	80,44	-	-	0,00	0,00	-	0,00
7	2 512	2 516	<b>24,42</b>	107,5	0,00	79,01	-	-	0,00	0,00	-	0,00
8	3 009	3 013	<b>22,12</b>	107,5	0,00	80,58	-	-	0,00	0,00	-	0,00
9	3 231	3 234	<b>21,20</b>	107,5	0,00	81,19	-	-	0,00	0,00	-	0,00

Sum 39,15

- Data undefined due to calculation with octave data

### Noise sensitive area: J Asuinrakennus (Tuomiperäntie 656)

WTG Wind speed: 8,0 m/s

No.	Distance [m]	Sound distance [m]	Calculated [dB(A)]	LwA,ref [dB(A)]	Dc [dB]	Adiv [dB]	Aatm [dB]	Agr [dB]	Abar [dB]	Amisc [dB]	A [dB]	Cmet [dB]
1	1 595	1 600	<b>29,88</b>	107,5	0,00	75,08	-	-	0,00	0,00	-	0,00
2	2 213	2 217	<b>25,99</b>	107,5	0,00	77,91	-	-	0,00	0,00	-	0,00
3	1 180	1 187	<b>33,28</b>	107,5	0,00	72,49	-	-	0,00	0,00	-	0,00
4	1 237	1 245	<b>32,75</b>	107,5	0,00	72,90	-	-	0,00	0,00	-	0,00
5	1 726	1 731	<b>28,96</b>	107,5	0,00	75,77	-	-	0,00	0,00	-	0,00
6	1 299	1 306	<b>32,21</b>	107,5	0,00	73,32	-	-	0,00	0,00	-	0,00
7	1 960	1 964	<b>27,46</b>	107,5	0,00	76,86	-	-	0,00	0,00	-	0,00
8	1 907	1 911	<b>27,78</b>	107,5	0,00	76,63	-	-	0,00	0,00	-	0,00
9	2 763	2 766	<b>23,22</b>	107,5	0,00	79,84	-	-	0,00	0,00	-	0,00

Sum 39,64

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## DECIBEL - Assumptions for noise calculation

**Calculation:** V126-3300 x 9 x HH137 (GF=0,4) **Noise calculation model:** ISO 9613-2 General 8,0 m/s

### Noise calculation model:

ISO 9613-2 General

### Wind speed:

8,0 m/s

### Ground attenuation:

General, Ground factor: 0,4

### Meteorological coefficient, C0:

0,0 dB

### Type of demand in calculation:

1: WTG noise is compared to demand (DK, DE, SE, NL etc.)

### Noise values in calculation:

All noise values are mean values (Lwa) (Normal)

### Pure tones:

Pure and Impulse tone penalty are added to WTG source noise

### Height above ground level, when no value in NSA object:

4,0 m Allow override of model height with height from NSA object

### Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:

0,0 dB(A)

### Octave data required

Air absorption

63	125	250	500	1 000	2 000	4 000	8 000
[db/km]	[db/km]	[db/km]	[db/km]	[db/km]	[db/km]	[db/km]	[db/km]
0,1	0,4	1,0	1,9	3,7	9,7	32,8	117,0

**WTG:** VESTAS V126 3300 126.0 !O!

**Noise:** Level 0 - Estimated - Mode 0 - 01-2013

Source	Source/Date	Creator	Edited
General Specification V126-3.3 MW (Doc. no.:0034-7616 V05)	16.1.2013	EMD	30.4.2013 14:09

Status	Hub height [m]	Wind speed [m/s]	LwA,ref [dB(A)]	Pure tones	Octave data								
					63 [dB]	125 [dB]	250 [dB]	500 [dB]	1000 [dB]	2000 [dB]	4000 [dB]	8000 [dB]	
From Windcat	137,0	8,0	107,5	No	Generic data	89,1	96,1	99,5	102,1	101,9	99,0	94,2	84,7

**NSA:** Asuinrakennus (Pinolantie 266)-A

### Predefined calculation standard:

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

**NSA:** Hoitokoti (Pinolantie 189)-B

### Predefined calculation standard:

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

**NSA:** Asuinrakennus (Männikkötie 33)-C

### Predefined calculation standard:

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

**NSA:** Kantokylän kylätalo (Vanhakouluntie 36)-D

### Predefined calculation standard:

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

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Calculated:

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## DECIBEL - Assumptions for noise calculation

**Calculation:** V126-3300 x 9 x HH137 (GF=0,4) **Noise calculation model:** ISO 9613-2 General 8,0 m/s

**NSA:** Asuinrakennus (Vanhakouluntie 65)-E

**Predefined calculation standard:**

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

**NSA:** Asuinrakennus (Levänevantie 227)-F

**Predefined calculation standard:**

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

**NSA:** Asuinrakennus (Levänevantie 286)-G

**Predefined calculation standard:**

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

**NSA:** Asuinrakennus (Kivinevantie 75)-H

**Predefined calculation standard:**

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

**NSA:** Asuinrakennus (Levänevantie 441)-I

**Predefined calculation standard:**

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

**NSA:** Asuinrakennus (Tuomiperäntie 656)-J

**Predefined calculation standard:**

**Imission height(a.g.l.):** Use standard value from calculation model

**Noise demand:** 40,0 dB(A)

**Distance demand:**

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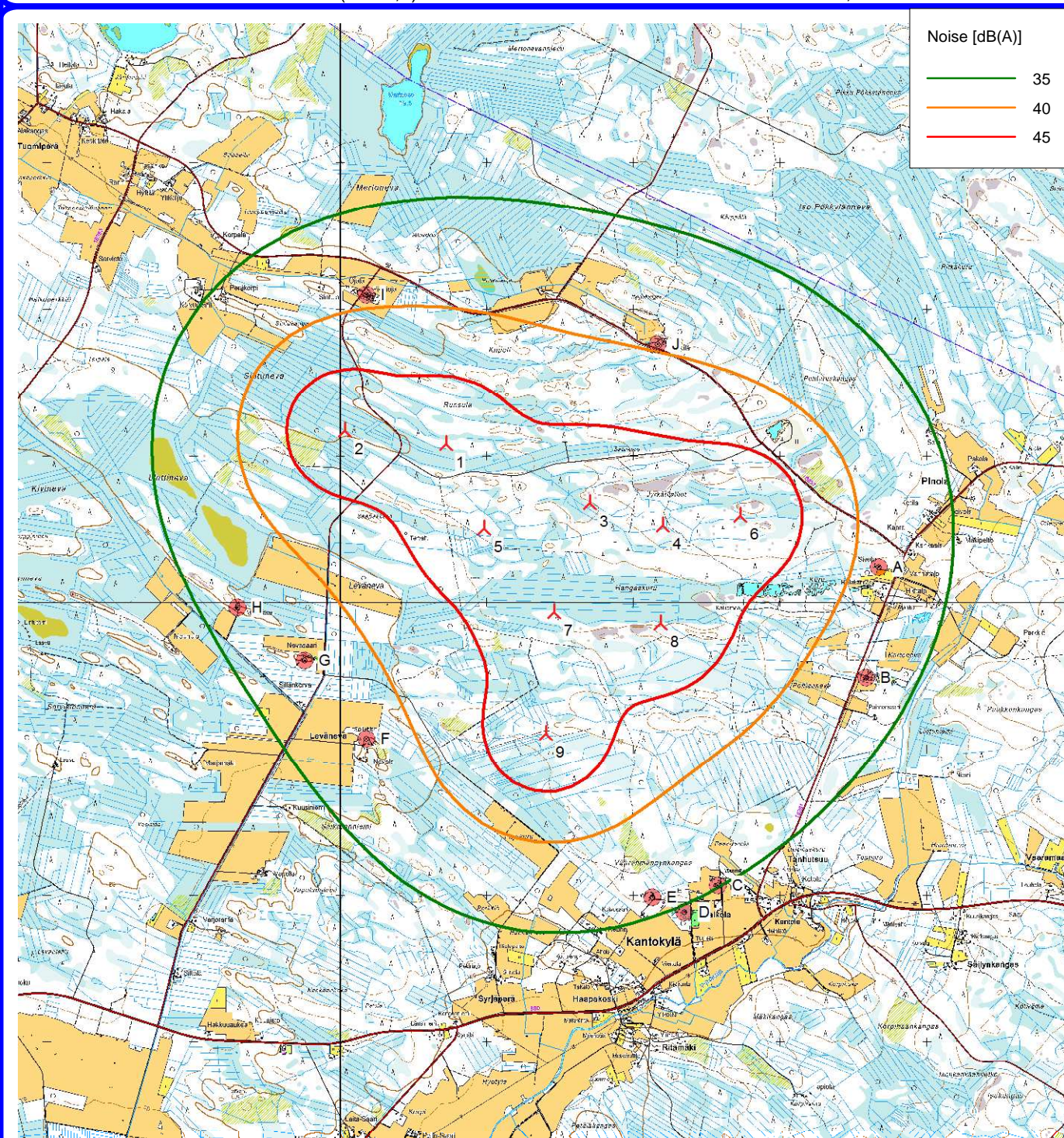
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**DECIBEL - Map 8,0 m/s**

Calculation: V126-3300 x 9 x HH137 (GF=0,4) Noise calculation model: ISO 9613-2 General 8,0 m/s



Map: Peruskartat , Print scale 1:40 000, Map center Finish TM ETRS-TM35FIN-ETRS89 East: 393 381 North: 7 110 140

▲ New WTG

■ Noise sensitive area

Noise calculation model: ISO 9613-2 General. Wind speed: 8,0 m/s  
Height above sea level from active line object