

Project:

Analiza hałas

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Calculated:

2014-04-04 21:27/2.9.207

**DECIBEL - Main Result****Calculation:** Analiza hałas - wariant proponowany**Noise calculation model:**

ISO 9613-2 General

**Wind speed:**

6,0 m/s

**Ground attenuation:**

General, Ground factor: 0,0

**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)



Scale 1:12 500

New WTG

Noise sensitive area

**WTGs**

Geo [deg,min,sec]-WGS84			Z	Row data/Description	WTG type			Noise data				Wind speed [m/s]	Status	LwA,ref [dB(A)]	Pure tones	
	Longitude	Latitude			Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Creator					Name
1	18°42'23,00" East	52°12'19,00" North	111,5	E1	No	ENERCON	E-40/6,44-600	600	44,0	78,0	EMD	Level 0 - guaranteed - - 07-2003	6,0	ExtraPolated	99,0	0 dB g
2	18°42'05,00" East	52°12'18,00" North	117,4	E2	No	ENERCON	E-40/6,44-600	600	44,0	78,0	EMD	Level 0 - guaranteed - - 07-2003	6,0	ExtraPolated	99,0	0 dB g
g) Data calculated from data for other wind speed (uncertain)																

g) Data calculated from data for other wind speed (uncertain)

**Calculation Results****Sound Level**

Noise sensitive area		Geo [deg,min,sec]-WGS84		Z	Imission height	Demands		Sound Level		Demands fulfilled ?	
No.	Name	Longitude	Latitude			Noise	From WTGs	Distance to noise demand	Noise	Noise	Noise
				[m]	[m]	[dB(A)]	[dB(A)]	[m]			
A	R1	18°42'14,58" East	52°12'03,97" North	116,9	4,0	45,0	38,7	272	Yes		
B	R2	18°42'16,37" East	52°12'01,89" North	116,9	4,0	45,0	37,5	343	Yes		
C	R3	18°42'17,88" East	52°12'02,79" North	116,5	4,0	45,0	37,9	312	Yes		

**Distances (m)**

WTG	
NSA	1 2
A	491 458
B	540 543
C	497 530

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**DECIBEL - Detailed results****Calculation:** Analiza hałas - wariant proponowany **Noise calculation model:** ISO 9613-2 General 6,0 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 R1**

WTG		Wind speed: 6,0 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	491	496	<b>35,44</b>	99,0	0,00	64,91	-	-	0,00	0,00	-	0,00
2	470	476	<b>35,85</b>	99,0	0,00	64,56	-	-	0,00	0,00	-	0,00
Sum	38,66											

- Data undefined due to calculation with octave data

**Noise sensitive area: B R2**

WTG		Wind speed: 6,0 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	544	548	<b>34,45</b>	99,0	0,00	65,78	-	-	0,00	0,00	-	0,00
2	543	548	<b>34,45</b>	99,0	0,00	65,77	-	-	0,00	0,00	-	0,00
Sum	37,46											

- Data undefined due to calculation with octave data

**Noise sensitive area: C R3**

WTG		Wind speed: 6,0 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	510	515	<b>35,07</b>	99,0	0,00	65,24	-	-	0,00	0,00	-	0,00
2	530	535	<b>34,68</b>	99,0	0,00	65,57	-	-	0,00	0,00	-	0,00
Sum	37,89											

- Data undefined due to calculation with octave data

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**DECIBEL - Assumptions for noise calculation****Calculation:** Analiza hałas - wariant proponowany **Noise calculation model:** ISO 9613-2 General 6,0 m/s**Noise calculation model:**

ISO 9613-2 General

**Wind speed:**

6,0 m/s

**Ground attenuation:**

General, Ground factor: 0,0

**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:** ENERCON E-40/6.44 600 44.0 !O!**Noise:** Level 0 - guaranteed - - 07-2003

Source	Source/Date	Creator	Edited
Manufacturer	2003-07-01	EMD	2006-07-12 12:25

Status	Hub height [m]	Wind speed [m/s]	LwA,ref [dB(A)]	Pure tones		Octave data							
						63	125	250	500	1000	2000	4000	8000
						[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]
ExtraPolated	78,0	6,0	99,0	No	Generic data	80,6	87,6	91,0	93,6	93,4	90,5	85,7	76,2

**NSA:** R1-A**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 45,0 dB(A)**Distance demand:****NSA:** R2-B**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 45,0 dB(A)**Distance demand:****NSA:** R3-C**Predefined calculation standard:****Imission height(a.g.l.):** Use standard value from calculation model**Noise demand:** 45,0 dB(A)**Distance demand:**