

Project:

Analiza hałas

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2014-04-08 23:43 / 1

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Calculated:

2014-04-04 21:45/2.9.207

DECIBEL - Main Result**Calculation:** Analiza hałas - wariant alternatywny**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	WTG type		Noise data													
	Longitude	Latitude	Z	Row data/Description	Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Creator	Name	Wind speed [m/s]	Status	LwA,ref [dB(A)]	Pure tones
1	18°42'23,00" East	52°12'19,00" North	111,5	E1	No	ENERCO N	E-40/5,40-500	500	40,3	65,0	EMD	8m/s Man. guaranteed Hub55m 12/98	6,0	From slope	97,0	0 dB g
2	18°42'05,00" East	52°12'18,00" North	117,4	E2	No	ENERCO N	E-40/5,40-500	500	40,3	65,0	EMD	8m/s Man. guaranteed Hub55m 12/98	6,0	From slope	97,0	0 dB g
3	18°42'14,15" East	52°12'17,98" North	114,4	E3	No	ENERCO N	E-40/5,40-500	500	40,3	65,0	EMD	8m/s Man. guaranteed Hub55m 12/98	6,0	From slope	97,0	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					Demands		Sound Level		Demands fulfilled ?	
No.	Name	Longitude	Latitude	Z	Imission height	Noise	From WTGs	Distance to noise demand	Noise	
				[m]	[m]	[dB(A)]	[dB(A)]	[m]		
A R1	18°42'14,89" East	52°12'04,09" North	116,8		4,0	45,0	3 8,9	233	Yes	
B R2	18°42'16,66" East	52°12'01,94" North	116,8		4,0	45,0	3 7,6	302	Yes	
C R3	18°42'17,95" East	52°12'03,12" North	116,4		4,0	45,0	3 8,2	269	Yes	

Distances (m)**WTG**

NSA	1	2	3
A	486	456	430
B	537	543	498
C	489	521	465

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DECIBEL - Detailed results**Calculation:** Analiza hałas - wariant alternatywny **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	486	489	33,58	97,0	0,00	64,79	-	-	0,00	0,00	-	0,00
2	469	473	33,91	97,0	0,00	64,50	-	-	0,00	0,00	-	0,00
3	430	434	34,77	97,0	0,00	63,74	-	-	0,00	0,00	-	0,00
Sum	38,89											

- 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	541	544	32,53	97,0	0,00	65,71	-	-	0,00	0,00	-	0,00
2	543	547	32,47	97,0	0,00	65,76	-	-	0,00	0,00	-	0,00
3	498	502	33,33	97,0	0,00	65,01	-	-	0,00	0,00	-	0,00
Sum	37,57											

- 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	500	503	33,30	97,0	0,00	65,04	-	-	0,00	0,00	-	0,00
2	521	525	32,87	97,0	0,00	65,41	-	-	0,00	0,00	-	0,00
3	465	469	34,01	97,0	0,00	64,42	-	-	0,00	0,00	-	0,00
Sum	38,19											

- Data undefined due to calculation with octave data

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DECIBEL - Assumptions for noise calculation**Calculation:** Analiza hałas - wariant alternatywny **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-40/5.40 500 40.3 !O!**Noise:** 8m/s Man. guaranteed Hub55m 12/98

Source Source/Date Creator Edited

Manufacturer 1998-12-01 EMD 2003-08-08 16:40

Refers to measuring report KÖTTER 23554-2.002 from 03.03.1998

For older turbines, there may be a tonality due to a different generator type. If in doubt, please ask Enercon.

Status	Hub height [m]	Wind speed [m/s]	LwA,ref [dB(A)]	Pure tones		Octave data							
						63	125	250	500	1000	2000	4000	8000
From slope	65,0	6,0	97,0	No	Generic data	78,6	85,6	89,0	91,6	91,4	88,5	83,7	74,2

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:**