

Svarthammaren vindkraftverk

VEDLEGG D – STØY OG SKYGGEKAST

Project:

Svarthammaren

Licensed user:

Meventus AS

Konsgård Allé 59

NO-4632 Kristiansand

+47 3860 7115

Data / data@meventus.com

Calculated:

14.01.2019 15:02/3.2.737



NORD2000 - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

Assumptions

Weather stability
Relative humidity 70.0 %
Air temperature 5.1 °C
Height for air temperature 100.0 m
Stability parameters Night; Clear sky
Inverse Monin Obukhov length 0.0100
Temperature scale T* 0.0500

Terrain

Elevation based on object
 201101_Height contours_Svarthammaren
Roughness based on line object
 Roughness Lines: Snillford_roulines_rough.wpo (5)
Terrain type based on area object
 Terrain Hardness
Month for calculation January

Wind speed criteria

Uniform wind speed at 10 m agl.

Wind speed

Max noise wind speed

Wind direction

Height above ground level for receiver

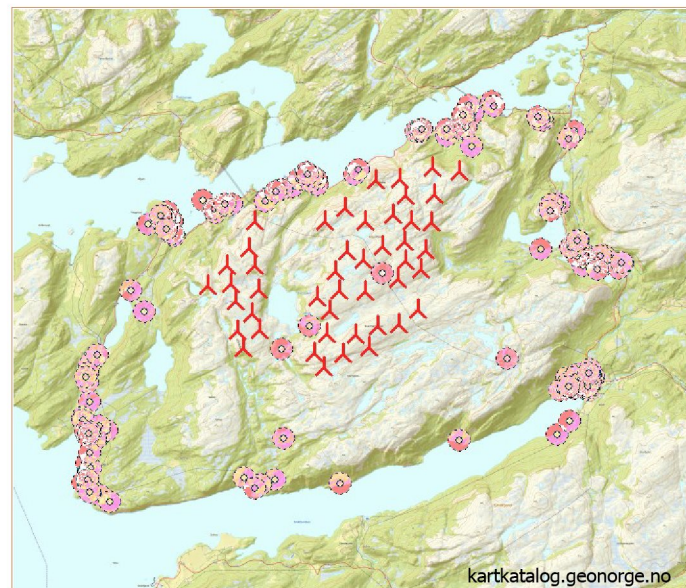
Wind speed has been extrapolated to calculation height using

IEC profile shear ($z_0 = 0.05\text{m}$)

No stability correction

Version

All coordinates are in
 UTM WGS84 Zone: 32



▲ New WTG

Scale 1:200,000
 ■ Noise sensitive area

WTGs

	X(East)	Y(North)	Z	Row data/Description	WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Setting	Noise data	
					Valid	Manufact.						Creator	Name
1	517,914	7,032,388	560.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day	USER	104.0 dB (with serrated blades)
											Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
2	520,238	7,035,088	509.9	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day	USER	104.0 dB (with serrated blades)
											Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
3	519,138	7,033,388	540.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day	USER	104.0 dB (with serrated blades)
											Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
4	518,114	7,034,413	475.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day	USER	104.0 dB (with serrated blades)
											Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
5	517,838	7,030,938	570.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day	USER	104.0 dB (with serrated blades)
											Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
6	518,388	7,033,088	540.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day	USER	104.0 dB (with serrated blades)
											Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
7	520,988	7,035,138	500.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day	USER	104.0 dB (with serrated blades)
											Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
8	519,164	7,034,413	510.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day	USER	104.0 dB (with serrated blades)
											Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
9	518,488	7,032,588	542.3	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day	USER	104.0 dB (with serrated blades)
											Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
10	519,638	7,033,763	540.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day	USER	104.0 dB (with serrated blades)
											Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
11	518,938	7,031,413	560.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day	USER	104.0 dB (with serrated blades)
											Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
12	519,914	7,034,588	528.4	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day	USER	104.0 dB (with serrated blades)
											Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
13	520,214	7,033,888	520.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day	USER	104.0 dB (with serrated blades)

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NORD2000 - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

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	X(East)	Y(North)	Z	Row data/Description	WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Setting	Noise data	
					Valid	Manufact.						Creator	Name
			[m]										
14	520,238	7,033,388	520.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
15	516,114	7,033,688	456.9	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
16	518,640	7,034,758	464.5	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
17	518,614	7,030,913	560.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
18	519,514	7,031,638	540.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
19	518,688	7,033,613	519.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
20	520,938	7,035,838	435.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
21	519,447	7,035,509	423.6	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
22	520,388	7,034,413	516.2	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
23	518,238	7,032,038	535.8	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
24	515,764	7,032,288	480.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
25	519,188	7,032,563	520.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
26	520,788	7,033,663	487.2	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
27	516,264	7,033,238	460.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
28	515,514	7,033,213	460.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
29	515,814	7,031,488	460.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
30	521,664	7,035,738	420.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
31	516,256	7,034,384	369.4	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
32	520,938	7,034,388	477.5	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
33	515,014	7,032,688	420.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
34	518,114	7,030,538	507.2	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
35	516,188	7,031,963	460.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)
36	520,588	7,032,088	484.9	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening	USER	104.0 dB (with serrated blades)
											Night	USER	104.0 dB (with serrated blades)
											Day	USER	104.0 dB (with serrated blades)

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NORD2000 - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

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	X(East)	Y(North)	Z [m]	Row data/Description	WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Noise data		
					Valid	Manufact.					Setting	Creator	Name
37	520,052	7,032,882	500.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Evening Night	USER USER	104.0 dB (with serrated blades) 104.0 dB (with serrated blades)
38	520,088	7,035,538	409.1	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day Evening Night	USER USER USER	104.0 dB (with serrated blades) 104.0 dB (with serrated blades) 104.0 dB (with serrated blades)
39	520,088	7,031,713	480.4	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day Evening Night	USER USER USER	104.0 dB (with serrated blades) 104.0 dB (with serrated blades) 104.0 dB (with serrated blades)
40	515,614	7,032,738	440.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day Evening Night	USER USER USER	104.0 dB (with serrated blades) 104.0 dB (with serrated blades) 104.0 dB (with serrated blades)
41	516,364	7,032,588	440.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day Evening Night	USER USER USER	104.0 dB (with serrated blades) 104.0 dB (with serrated blades) 104.0 dB (with serrated blades)
42	520,664	7,033,138	452.2	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day Evening Night	USER USER USER	104.0 dB (with serrated blades) 104.0 dB (with serrated blades) 104.0 dB (with serrated blades)
43	519,288	7,031,088	499.8	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day Evening Night	USER USER USER	104.0 dB (with serrated blades) 104.0 dB (with serrated blades) 104.0 dB (with serrated blades)
44	515,964	7,031,038	434.5	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day Evening Night	USER USER USER	104.0 dB (with serrated blades) 104.0 dB (with serrated blades) 104.0 dB (with serrated blades)
45	518,164	7,031,438	484.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day Evening Night	USER USER USER	104.0 dB (with serrated blades) 104.0 dB (with serrated blades) 104.0 dB (with serrated blades)
46	516,388	7,031,538	420.0	Generic 6 MW RD 155...	Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	Day Evening Night	USER USER USER	104.0 dB (with serrated blades) 104.0 dB (with serrated blades) 104.0 dB (with serrated blades)

Calculation Results

Sound level

Noise sensitive area

No.	Name	X(East)	Y(North)	Z [m]	Imission height [m]	Demands Noise [dB(A)]	Sound level From WTGs [dB(A)]	Demands fulfilled? Noise [dB(A)]
A	Noise sensitive point: Norwegian - Yellow zone (587)	519,632	7,033,042	481.9	4.0	45.0	53.6	No
A	Day						47.2	
A	Evening						47.2	
A	Night						47.2	
B	Noise sensitive point: Norwegian - Yellow zone (588)	517,714	7,031,642	330.4	4.0	45.0	48.5	No
B	Day						42.1	
B	Evening						42.1	
B	Night						42.1	
C	Noise sensitive point: Norwegian - Yellow zone (589)	516,987	7,031,027	330.0	4.0	45.0	48.2	No
C	Day						41.8	
C	Evening						41.8	
C	Night						41.8	
D	Noise sensitive point: Norwegian - Yellow zone (590)	518,986	7,035,769	25.0	4.0	45.0	44.6	Yes
D	Day						38.2	
D	Evening						38.2	
D	Night						38.2	
E	Noise sensitive point: Norwegian - Yellow zone (591)	518,879	7,035,649	52.7	4.0	45.0	44.4	Yes
E	Day						38.0	
E	Evening						38.0	
E	Night						38.0	
F	Noise sensitive point: Norwegian - Yellow zone (592)	517,904	7,035,365	27.2	4.0	45.0	43.8	Yes
F	Day						37.4	
F	Evening						37.4	
F	Night						37.4	
G	Noise sensitive point: Norwegian - Yellow zone (593)	517,861	7,035,523	39.6	4.0	45.0	43.5	Yes
G	Day						37.1	
G	Evening						37.1	

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NORD2000 - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

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Noise sensitive area

No.	Name	X(East)	Y(North)	Z [m]	Emission height [m]	Demands Noise [dB(A)]	Sound level From WTGs [dB(A)]	Demands fulfilled? Noise [dB(A)]
G	Night						37.1	
H	Noise sensitive point: Norwegian - Yellow zone (594)	517,719	7,035,461	92.0	4.0	45.0	43.2	Yes
H	Day						36.8	
H	Evening						36.8	
H	Night						36.8	
I	Noise sensitive point: Norwegian - Yellow zone (595)	521,970	7,036,412	210.0	4.0	45.0	43.4	Yes
I	Day						37.0	
I	Evening						37.0	
I	Night						37.0	
J	Noise sensitive point: Norwegian - Yellow zone (596)	517,778	7,035,585	63.1	4.0	45.0	43.0	Yes
J	Day						36.6	
J	Evening						36.6	
J	Night						36.6	
K	Noise sensitive point: Norwegian - Yellow zone (597)	521,832	7,036,922	10.0	4.0	45.0	42.6	Yes
K	Day						36.2	
K	Evening						36.2	
K	Night						36.2	
L	Noise sensitive point: Norwegian - Yellow zone (598)	521,305	7,036,867	20.0	4.0	45.0	42.5	Yes
L	Day						36.1	
L	Evening						36.1	
L	Night						36.1	
M	Noise sensitive point: Norwegian - Yellow zone (599)	515,269	7,034,714	21.0	4.0	45.0	42.3	Yes
M	Day						35.9	
M	Evening						35.9	
M	Night						35.9	
N	Noise sensitive point: Norwegian - Yellow zone (600)	517,614	7,035,682	11.7	4.0	45.0	42.1	Yes
N	Day						35.7	
N	Evening						35.7	
N	Night						35.7	
O	Noise sensitive point: Norwegian - Yellow zone (601)	521,635	7,036,883	4.2	4.0	45.0	42.1	Yes
O	Day						35.7	
O	Evening						35.7	
O	Night						35.7	
P	Noise sensitive point: Norwegian - Yellow zone (602)	517,414	7,035,512	40.3	4.0	45.0	42.1	Yes
P	Day						35.7	
P	Evening						35.7	
P	Night						35.7	
Q	Noise sensitive point: Norwegian - Yellow zone (603)	521,327	7,036,676	35.4	4.0	45.0	42.0	Yes
Q	Day						35.6	
Q	Evening						35.6	
Q	Night						35.6	
R	Noise sensitive point: Norwegian - Yellow zone (604)	521,468	7,036,797	10.8	4.0	45.0	42.0	Yes
R	Day						35.7	
R	Evening						35.7	
R	Night						35.7	
S	Noise sensitive point: Norwegian - Yellow zone (605)	521,713	7,036,895	4.3	4.0	45.0	41.8	Yes
S	Day						35.4	
S	Evening						35.4	
S	Night						35.4	
T	Noise sensitive point: Norwegian - Yellow zone (606)	514,077	7,034,383	7.3	4.0	45.0	41.8	Yes
T	Day						35.4	
T	Evening						35.4	
T	Night						35.4	
U	Noise sensitive point: Norwegian - Yellow zone (607)	517,228	7,035,298	66.7	4.0	45.0	41.3	Yes
U	Day						34.9	
U	Evening						34.9	
U	Night						34.9	
V	Noise sensitive point: Norwegian - Yellow zone (608)	513,877	7,034,520	8.8	4.0	45.0	41.2	Yes
V	Day						34.8	
V	Evening						34.8	
V	Night						34.8	
W	Noise sensitive point: Norwegian - Yellow zone (609)	521,770	7,037,077	12.9	4.0	45.0	41.1	Yes
W	Day						34.7	
W	Evening						34.7	
W	Night						34.7	

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NORD2000 - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

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Noise sensitive area

No.	Name	X(East)	Y(North)	Z [m]	Emission height [m]	Demands Noise [dB(A)]	Sound level From WGTs [dB(A)]	Demands fulfilled? Noise [dB(A)]
	X Noise sensitive point: Norwegian - Yellow zone (610)	516,589	7,035,014	22.9	4.0	45.0	41.0	Yes
	X Day						34.6	
	X Evening						34.6	
	X Night						34.6	
	Y Noise sensitive point: Norwegian - Yellow zone (611)	513,934	7,034,633	8.6	4.0	45.0	41.0	Yes
	Y Day						34.6	
	Y Evening						34.6	
	Y Night						34.6	
	Z Noise sensitive point: Norwegian - Yellow zone (612)	521,668	7,036,884	5.0	4.0	45.0	41.0	Yes
	Z Day						34.6	
	Z Evening						34.6	
	Z Night						34.6	
	AA Noise sensitive point: Norwegian - Yellow zone (613)	513,860	7,034,553	20.6	4.0	45.0	40.9	Yes
	AA Day						34.5	
	AA Evening						34.5	
	AA Night						34.5	
	AB Noise sensitive point: Norwegian - Yellow zone (614)	521,987	7,037,272	30.0	4.0	45.0	40.9	Yes
	AB Day						34.5	
	AB Evening						34.5	
	AB Night						34.5	
	AC Noise sensitive point: Norwegian - Yellow zone (615)	515,427	7,034,791	37.9	4.0	45.0	40.6	Yes
	AC Day						34.2	
	AC Evening						34.2	
	AC Night						34.2	
	AD Noise sensitive point: Norwegian - Yellow zone (616)	516,817	7,035,188	20.0	4.0	45.0	40.7	Yes
	AD Day						34.3	
	AD Evening						34.3	
	AD Night						34.3	
	AE Noise sensitive point: Norwegian - Yellow zone (617)	521,747	7,037,244	23.6	4.0	45.0	40.6	Yes
	AE Day						34.3	
	AE Evening						34.3	
	AE Night						34.3	
	AF Noise sensitive point: Norwegian - Yellow zone (618)	517,654	7,035,631	28.0	4.0	45.0	40.6	Yes
	AF Day						34.2	
	AF Evening						34.2	
	AF Night						34.2	
	AG Noise sensitive point: Norwegian - Yellow zone (619)	516,539	7,034,931	30.0	4.0	45.0	40.3	Yes
	AG Day						33.9	
	AG Evening						33.9	
	AG Night						33.9	
	AH Noise sensitive point: Norwegian - Yellow zone (620)	515,631	7,034,858	17.2	4.0	45.0	40.1	Yes
	AH Day						33.7	
	AH Evening						33.7	
	AH Night						33.7	
	AI Noise sensitive point: Norwegian - Yellow zone (621)	513,994	7,034,435	5.0	4.0	45.0	40.0	Yes
	AI Day						33.6	
	AI Evening						33.6	
	AI Night						33.6	
	AJ Noise sensitive point: Norwegian - Yellow zone (622)	515,407	7,034,826	20.0	4.0	45.0	40.0	Yes
	AJ Day						33.6	
	AJ Evening						33.6	
	AJ Night						33.6	
	AK Noise sensitive point: Norwegian - Yellow zone (623)	513,763	7,034,526	43.9	4.0	45.0	40.0	Yes
	AK Day						33.6	
	AK Evening						33.6	
	AK Night						33.6	
	AL Noise sensitive point: Norwegian - Yellow zone (624)	514,094	7,034,052	7.7	4.0	45.0	39.9	Yes
	AL Day						33.5	
	AL Evening						33.5	
	AL Night						33.5	
	AM Noise sensitive point: Norwegian - Yellow zone (625)	513,922	7,034,185	33.0	4.0	45.0	39.9	Yes
	AM Day						33.5	
	AM Evening						33.5	
	AM Night						33.5	
	AN Noise sensitive point: Norwegian - Yellow zone (626)	513,854	7,034,468	11.1	4.0	45.0	39.9	Yes

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NORD2000 - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

...continued from previous page

Noise sensitive area

No.	Name	X(East)	Y(North)	Z [m]	Imission height [m]	Demands Noise [dB(A)]	Sound level From WTGs [dB(A)]	Demands fulfilled? Noise [dB(A)]
AN	Day						33.5	
AN	Evening						33.5	
AN	Night						33.5	
AO	Noise sensitive point: Norwegian - Yellow zone (627)	515,173	7,034,724	2.7	4.0	45.0	39.8	Yes
AO	Day						33.4	
AO	Evening						33.4	
AO	Night						33.4	
AP	Noise sensitive point: Norwegian - Yellow zone (628)	520,654	7,036,842	5.0	4.0	45.0	39.7	Yes
AP	Day						33.3	
AP	Evening						33.3	
AP	Night						33.3	
AQ	Noise sensitive point: Norwegian - Yellow zone (629)	515,462	7,034,838	16.1	4.0	45.0	39.5	Yes
AQ	Day						33.1	
AQ	Evening						33.1	
AQ	Night						33.1	
AR	Noise sensitive point: Norwegian - Yellow zone (630)	514,880	7,034,943	11.4	4.0	45.0	39.5	Yes
AR	Day						33.1	
AR	Evening						33.1	
AR	Night						33.1	
AS	Noise sensitive point: Norwegian - Yellow zone (631)	515,203	7,034,679	9.0	4.0	45.0	39.8	Yes
AS	Day						33.4	
AS	Evening						33.4	
AS	Night						33.4	
AT	Noise sensitive point: Norwegian - Yellow zone (632)	521,891	7,037,497	10.7	4.0	45.0	39.4	Yes
AT	Day						33.0	
AT	Evening						33.0	
AT	Night						33.0	
AU	Noise sensitive point: Norwegian - Yellow zone (633)	514,049	7,034,112	6.5	4.0	45.0	39.2	Yes
AU	Day						32.8	
AU	Evening						32.8	
AU	Night						32.8	
AV	Noise sensitive point: Norwegian - Yellow zone (634)	513,831	7,034,333	50.0	4.0	45.0	39.2	Yes
AV	Day						32.8	
AV	Evening						32.8	
AV	Night						32.8	
AW	Noise sensitive point: Norwegian - Yellow zone (635)	514,115	7,034,002	5.1	4.0	45.0	39.0	Yes
AW	Day						32.6	
AW	Evening						32.6	
AW	Night						32.6	
AX	Noise sensitive point: Norwegian - Yellow zone (636)	516,914	7,035,230	20.0	4.0	45.0	39.0	Yes
AX	Day						32.6	
AX	Evening						32.6	
AX	Night						32.6	
AY	Noise sensitive point: Norwegian - Yellow zone (637)	515,214	7,034,625	13.4	4.0	45.0	38.6	Yes
AY	Day						32.2	
AY	Evening						32.2	
AY	Night						32.2	
AZ	Noise sensitive point: Norwegian - Yellow zone (638)	516,955	7,035,241	22.9	4.0	45.0	38.0	Yes
AZ	Day						31.6	
AZ	Evening						31.6	
AZ	Night						31.6	
BA	Noise sensitive point: Norwegian - Yellow zone (639)	512,992	7,032,543	30.3	4.0	45.0	37.4	Yes
BA	Day						31.0	
BA	Evening						31.0	
BA	Night						31.0	
BB	Noise sensitive point: Norwegian - Yellow zone (640)	524,781	7,033,942	161.6	4.0	45.0	36.6	Yes
BB	Day						30.2	
BB	Evening						30.2	
BB	Night						30.2	
BC	Noise sensitive point: Norwegian - Yellow zone (641)	523,815	7,033,707	105.0	4.0	45.0	36.6	Yes
BC	Day						30.2	
BC	Evening						30.2	
BC	Night						30.2	
BD	Noise sensitive point: Norwegian - Yellow zone (642)	524,826	7,033,942	152.1	4.0	45.0	36.3	Yes
BD	Day						29.9	

To be continued on next page...



NORD2000 - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

...continued from previous page

Noise sensitive area

No.	Name	X(East)	Y(North)	Z [m]	Emission height [m]	Demands Noise [dB(A)]	Sound level From WTGs [dB(A)]	Demands fulfilled? Noise [dB(A)]
BD	Evening						29.9	
BD	Night						29.9	
BE	Noise sensitive point: Norwegian - Yellow zone (643)	524,602	7,033,767	107.2	4.0	45.0	36.1	Yes
BE	Day						29.7	
BE	Evening						29.7	
BE	Night						29.7	
BF	Noise sensitive point: Norwegian - Yellow zone (644)	520,596	7,036,820	5.7	4.0	45.0	36.0	Yes
BF	Day						29.6	
BF	Evening						29.6	
BF	Night						29.6	
BG	Noise sensitive point: Norwegian - Yellow zone (645)	524,739	7,033,802	120.0	4.0	45.0	35.9	Yes
BG	Day						29.5	
BG	Evening						29.5	
BG	Night						29.5	
BH	Noise sensitive point: Norwegian - Yellow zone (646)	522,970	7,030,802	392.9	4.0	45.0	35.7	Yes
BH	Day						29.3	
BH	Evening						29.3	
BH	Night						29.3	
BI	Noise sensitive point: Norwegian - Yellow zone (647)	520,516	7,036,805	6.3	4.0	45.0	35.4	Yes
BI	Day						29.0	
BI	Evening						29.0	
BI	Night						29.0	
BJ	Noise sensitive point: Norwegian - Yellow zone (648)	524,295	7,034,912	105.0	4.0	45.0	35.4	Yes
BJ	Day						29.0	
BJ	Evening						29.0	
BJ	Night						29.0	
BK	Noise sensitive point: Norwegian - Yellow zone (649)	524,665	7,033,755	115.0	4.0	45.0	35.3	Yes
BK	Day						28.9	
BK	Evening						28.9	
BK	Night						28.9	
BL	Noise sensitive point: Norwegian - Yellow zone (650)	524,780	7,033,796	120.0	4.0	45.0	35.3	Yes
BL	Day						28.9	
BL	Evening						28.9	
BL	Night						28.9	
BM	Noise sensitive point: Norwegian - Yellow zone (651)	524,710	7,033,736	115.0	4.0	45.0	34.7	Yes
BM	Day						28.3	
BM	Evening						28.3	
BM	Night						28.3	
BN	Noise sensitive point: Norwegian - Yellow zone (652)	513,345	7,032,002	78.6	4.0	45.0	34.6	Yes
BN	Day						28.2	
BN	Evening						28.2	
BN	Night						28.2	
BO	Noise sensitive point: Norwegian - Yellow zone (653)	524,807	7,033,814	113.9	4.0	45.0	34.5	Yes
BO	Day						28.1	
BO	Evening						28.1	
BO	Night						28.1	
BP	Noise sensitive point: Norwegian - Yellow zone (654)	525,411	7,033,532	115.0	4.0	45.0	34.3	Yes
BP	Day						27.9	
BP	Evening						27.9	
BP	Night						27.9	
BQ	Noise sensitive point: Norwegian - Yellow zone (655)	524,787	7,033,534	119.1	4.0	45.0	34.2	Yes
BQ	Day						27.8	
BQ	Evening						27.8	
BQ	Night						27.8	
BR	Noise sensitive point: Norwegian - Yellow zone (656)	524,828	7,033,748	115.0	4.0	45.0	34.1	Yes
BR	Day						27.7	
BR	Evening						27.7	
BR	Night						27.7	
BS	Noise sensitive point: Norwegian - Yellow zone (657)	524,875	7,033,685	115.0	4.0	45.0	34.0	Yes
BS	Day						27.6	
BS	Evening						27.6	
BS	Night						27.6	
BT	Noise sensitive point: Norwegian - Yellow zone (658)	517,037	7,028,672	288.6	4.0	45.0	33.9	Yes
BT	Day						27.5	
BT	Evening						27.5	

To be continued on next page...



NORD2000 - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

...continued from previous page

Noise sensitive area

No.	Name	X(East)	Y(North)	Z [m]	Emission height [m]	Demands Noise [dB(A)]	Sound level From WTGs [dB(A)]	Demands fulfilled? Noise [dB(A)]
BT	Night					27.5		
BU	Noise sensitive point: Norwegian - Yellow zone (659)	520,551	7,036,791	9.5	4.0	45.0	33.8	Yes
BU	Day						27.4	
BU	Evening						27.4	
BU	Night						27.4	
BV	Noise sensitive point: Norwegian - Yellow zone (660)	525,446	7,033,497	115.0	4.0	45.0	33.8	Yes
BV	Day						27.4	
BV	Evening						27.4	
BV	Night						27.4	
BW	Noise sensitive point: Norwegian - Yellow zone (661)	524,976	7,033,598	115.0	4.0	45.0	33.6	Yes
BW	Day						27.2	
BW	Evening						27.2	
BW	Night						27.2	
BX	Noise sensitive point: Norwegian - Yellow zone (662)	525,454	7,033,422	115.0	4.0	45.0	33.5	Yes
BX	Day						27.1	
BX	Evening						27.1	
BX	Night						27.1	
BY	Noise sensitive point: Norwegian - Yellow zone (663)	525,453	7,033,458	115.0	4.0	45.0	33.5	Yes
BY	Day						27.1	
BY	Evening						27.1	
BY	Night						27.1	
BZ	Noise sensitive point: Norwegian - Yellow zone (664)	516,811	7,027,583	94.1	4.0	45.0	33.4	Yes
BZ	Day						27.0	
BZ	Evening						27.0	
BZ	Night						27.0	
CA	Noise sensitive point: Norwegian - Yellow zone (665)	525,496	7,033,550	125.6	4.0	45.0	33.1	Yes
CA	Day						26.7	
CA	Evening						26.7	
CA	Night						26.7	
CB	Noise sensitive point: Norwegian - Yellow zone (666)	520,580	7,036,795	9.1	4.0	45.0	33.0	Yes
CB	Day						26.6	
CB	Evening						26.6	
CB	Night						26.6	
CC	Noise sensitive point: Norwegian - Yellow zone (667)	524,958	7,033,290	115.0	4.0	45.0	32.9	Yes
CC	Day						26.5	
CC	Evening						26.5	
CC	Night						26.5	
CD	Noise sensitive point: Norwegian - Yellow zone (668)	515,997	7,027,632	66.8	4.0	45.0	32.6	Yes
CD	Day						26.2	
CD	Evening						26.2	
CD	Night						26.2	
CE	Noise sensitive point: Norwegian - Yellow zone (669)	525,614	7,033,342	117.3	4.0	45.0	32.4	Yes
CE	Day						26.0	
CE	Evening						26.0	
CE	Night						26.0	
CF	Noise sensitive point: Norwegian - Yellow zone (670)	522,513	7,037,607	6.9	4.0	45.0	32.4	Yes
CF	Day						26.0	
CF	Evening						26.0	
CF	Night						26.0	
CG	Noise sensitive point: Norwegian - Yellow zone (671)	525,586	7,033,362	117.1	4.0	45.0	32.4	Yes
CG	Day						26.0	
CG	Evening						26.0	
CG	Night						26.0	
CH	Noise sensitive point: Norwegian - Yellow zone (672)	511,999	7,030,722	40.0	4.0	45.0	32.1	Yes
CH	Day						25.7	
CH	Evening						25.7	
CH	Night						25.7	
CI	Noise sensitive point: Norwegian - Yellow zone (673)	511,900	7,030,573	40.0	4.0	45.0	31.9	Yes
CI	Day						25.5	
CI	Evening						25.5	
CI	Night						25.5	
CJ	Noise sensitive point: Norwegian - Yellow zone (674)	512,090	7,030,848	37.6	4.0	45.0	31.9	Yes
CJ	Day						25.5	
CJ	Evening						25.5	
CJ	Night						25.5	

To be continued on next page...



NORD2000 - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

...continued from previous page

Noise sensitive area

No.	Name	X(East)	Y(North)	Z [m]	Emission height [m]	Demands Noise [dB(A)]	Sound level From WTGs [dB(A)]	Demands fulfilled? Noise [dB(A)]
CK	Noise sensitive point: Norwegian - Yellow zone (675)	525,323	7,033,182	120.0	4.0	45.0	31.8	Yes
CK	Day						25.4	
CK	Evening						25.4	
CK	Night						25.4	
CL	Noise sensitive point: Norwegian - Yellow zone (676)	525,964	7,033,359	131.5	4.0	45.0	31.7	Yes
CL	Day						25.3	
CL	Evening						25.3	
CL	Night						25.3	
CM	Noise sensitive point: Norwegian - Yellow zone (677)	525,896	7,033,212	120.1	4.0	45.0	31.7	Yes
CM	Day						25.3	
CM	Evening						25.3	
CM	Night						25.3	
CN	Noise sensitive point: Norwegian - Yellow zone (678)	525,994	7,033,337	130.0	4.0	45.0	31.6	Yes
CN	Day						25.2	
CN	Evening						25.2	
CN	Night						25.2	
CO	Noise sensitive point: Norwegian - Yellow zone (679)	512,358	7,028,851	93.1	4.0	45.0	31.3	Yes
CO	Day						24.9	
CO	Evening						24.9	
CO	Night						24.9	
CP	Noise sensitive point: Norwegian - Yellow zone (680)	511,901	7,029,613	11.3	4.0	45.0	30.9	Yes
CP	Day						24.5	
CP	Evening						24.5	
CP	Night						24.5	
CQ	Noise sensitive point: Norwegian - Yellow zone (681)	511,858	7,030,109	17.8	4.0	45.0	30.4	Yes
CQ	Day						24.0	
CQ	Evening						24.0	
CQ	Night						24.0	
CR	Noise sensitive point: Norwegian - Yellow zone (682)	511,806	7,030,275	37.7	4.0	45.0	30.4	Yes
CR	Day						24.0	
CR	Evening						24.0	
CR	Night						24.0	
CS	Noise sensitive point: Norwegian - Yellow zone (683)	512,150	7,028,966	75.8	4.0	45.0	29.9	Yes
CS	Day						23.5	
CS	Evening						23.5	
CS	Night						23.5	
CT	Noise sensitive point: Norwegian - Yellow zone (684)	522,559	7,037,467	10.0	4.0	45.0	29.9	Yes
CT	Day						23.5	
CT	Evening						23.5	
CT	Night						23.5	
CU	Noise sensitive point: Norwegian - Yellow zone (685)	511,851	7,030,363	42.2	4.0	45.0	29.7	Yes
CU	Day						23.3	
CU	Evening						23.3	
CU	Night						23.3	
CV	Noise sensitive point: Norwegian - Yellow zone (686)	512,047	7,028,613	13.4	4.0	45.0	29.2	Yes
CV	Day						22.8	
CV	Evening						22.8	
CV	Night						22.8	
CW	Noise sensitive point: Norwegian - Yellow zone (687)	520,640	7,036,799	6.1	4.0	45.0	29.0	Yes
CW	Day						22.6	
CW	Evening						22.6	
CW	Night						22.6	
CX	Noise sensitive point: Norwegian - Yellow zone (688)	523,829	7,037,166	72.8	4.0	45.0	28.9	Yes
CX	Day						22.5	
CX	Evening						22.5	
CX	Night						22.5	
CY	Noise sensitive point: Norwegian - Yellow zone (689)	512,159	7,028,724	43.1	4.0	45.0	28.7	Yes
CY	Day						22.4	
CY	Evening						22.4	
CY	Night						22.4	
CZ	Noise sensitive point: Norwegian - Yellow zone (690)	524,309	7,028,822	15.6	4.0	45.0	28.3	Yes
CZ	Day						21.9	
CZ	Evening						21.9	
CZ	Night						21.9	
DA	Noise sensitive point: Norwegian - Yellow zone (691)	511,834	7,030,212	30.9	4.0	45.0	28.2	Yes

To be continued on next page...



NORD2000 - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

...continued from previous page

Noise sensitive area

No.	Name	X(East)	Y(North)	Z [m]	Imission height [m]	Demands Noise [dB(A)]	Sound level From WTGs [dB(A)]	Demands fulfilled? Noise [dB(A)]
DA	Day						21.8	
DA	Evening						21.8	
DA	Night						21.8	
DB	Noise sensitive point: Norwegian - Yellow zone (692)	511,957	7,028,786	24.2	4.0	45.0	27.9	Yes
DB	Day						21.5	
DB	Evening						21.5	
DB	Night						21.5	
DC	Noise sensitive point: Norwegian - Yellow zone (693)	513,439	7,034,304	12.8	4.0	45.0	27.7	Yes
DC	Day						21.4	
DC	Evening						21.4	
DC	Night						21.4	
DD	Noise sensitive point: Norwegian - Yellow zone (694)	523,855	7,037,095	73.2	4.0	45.0	27.6	Yes
DD	Day						21.2	
DD	Evening						21.2	
DD	Night						21.2	
DE	Noise sensitive point: Norwegian - Yellow zone (695)	524,630	7,029,162	6.6	4.0	45.0	27.3	Yes
DE	Day						20.9	
DE	Evening						20.9	
DE	Night						20.9	
DF	Noise sensitive point: Norwegian - Yellow zone (696)	511,888	7,027,405	70.0	4.0	45.0	27.1	Yes
DF	Day						20.7	
DF	Evening						20.7	
DF	Night						20.7	
DG	Noise sensitive point: Norwegian - Yellow zone (697)	524,179	7,034,862	98.6	4.0	45.0	27.1	Yes
DG	Day						20.7	
DG	Evening						20.7	
DG	Night						20.7	
DH	Noise sensitive point: Norwegian - Yellow zone (698)	524,697	7,036,818	10.0	4.0	45.0	27.1	Yes
DH	Day						20.7	
DH	Evening						20.7	
DH	Night						20.7	
DI	Noise sensitive point: Norwegian - Yellow zone (699)	511,727	7,027,483	20.0	4.0	45.0	26.8	Yes
DI	Day						20.4	
DI	Evening						20.4	
DI	Night						20.4	
DJ	Noise sensitive point: Norwegian - Yellow zone (700)	516,443	7,027,450	46.8	4.0	45.0	26.4	Yes
DJ	Day						20.0	
DJ	Evening						20.0	
DJ	Night						20.0	
DK	Noise sensitive point: Norwegian - Yellow zone (701)	524,129	7,034,850	100.2	4.0	45.0	26.2	Yes
DK	Day						19.8	
DK	Evening						19.8	
DK	Night						19.8	
DL	Noise sensitive point: Norwegian - Yellow zone (702)	511,868	7,028,775	10.0	4.0	45.0	25.2	Yes
DL	Day						18.8	
DL	Evening						18.8	
DL	Night						18.8	
DM	Noise sensitive point: Norwegian - Yellow zone (703)	511,853	7,027,548	35.0	4.0	45.0	25.1	Yes
DM	Day						18.7	
DM	Evening						18.7	
DM	Night						18.7	
DN	Noise sensitive point: Norwegian - Yellow zone (704)	524,539	7,036,630	15.0	4.0	45.0	25.3	Yes
DN	Day						18.9	
DN	Evening						18.9	
DN	Night						18.9	
DO	Noise sensitive point: Norwegian - Yellow zone (705)	511,901	7,028,822	21.7	4.0	45.0	23.5	Yes
DO	Day						17.1	
DO	Evening						17.1	
DO	Night						17.1	
DP	Noise sensitive point: Norwegian - Yellow zone (706)	511,861	7,028,703	2.2	4.0	45.0	23.5	Yes
DP	Day						17.1	
DP	Evening						17.1	
DP	Night						17.1	
DQ	Noise sensitive point: Norwegian - Yellow zone (707)	512,449	7,026,973	111.8	4.0	45.0	23.0	Yes
DQ	Day						16.6	

To be continued on next page...



NORD2000 - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

...continued from previous page

Noise sensitive area

No.	Name	X(East)	Y(North)	Z [m]	Emission height [m]	Demands Noise [dB(A)]	Sound level From WTGs [dB(A)]	Demands fulfilled? Noise [dB(A)]
DQ	Evening						16.6	
DQ	Night						16.6	
DR	Noise sensitive point: Norwegian - Yellow zone (708)	511,915	7,028,254	23.7	4.0	45.0	22.5	Yes
DR	Day						16.1	
DR	Evening						16.1	
DR	Night						16.1	
DS	Noise sensitive point: Norwegian - Yellow zone (709)	516,294	7,027,340	21.6	4.0	45.0	21.8	Yes
DS	Day						15.4	
DS	Evening						15.4	
DS	Night						15.4	
DT	Noise sensitive point: Norwegian - Yellow zone (710)	511,906	7,027,224	81.1	4.0	45.0	21.9	Yes
DT	Day						15.5	
DT	Evening						15.5	
DT	Night						15.5	
DU	Noise sensitive point: Norwegian - Yellow zone (711)	511,792	7,028,823	1.8	4.0	45.0	20.7	Yes
DU	Day						14.3	
DU	Evening						14.3	
DU	Night						14.3	
DV	Noise sensitive point: Norwegian - Yellow zone (712)	523,737	7,037,196	60.0	4.0	45.0	20.5	Yes
DV	Day						14.1	
DV	Evening						14.1	
DV	Night						14.1	
DW	Noise sensitive point: Norwegian - Yellow zone (713)	523,754	7,037,130	60.0	4.0	45.0	20.2	Yes
DW	Day						13.8	
DW	Evening						13.8	
DW	Night						13.8	
DX	Noise sensitive point: Norwegian - Yellow zone (714)	511,737	7,029,131	9.2	4.0	45.0	19.9	Yes
DX	Day						13.5	
DX	Evening						13.5	
DX	Night						13.5	
DY	Noise sensitive point: Norwegian - Yellow zone (715)	524,129	7,034,892	103.9	4.0	45.0	19.5	Yes
DY	Day						13.1	
DY	Evening						13.1	
DY	Night						13.1	
DZ	Noise sensitive point: Norwegian - Yellow zone (716)	511,717	7,029,190	6.1	4.0	45.0	18.8	Yes
DZ	Day						12.5	
DZ	Evening						12.5	
DZ	Night						12.5	
EA	Noise sensitive point: Norwegian - Yellow zone (717)	524,065	7,034,882	110.9	4.0	45.0	17.8	Yes
EA	Day						11.4	
EA	Evening						11.4	
EA	Night						11.4	
EB	Noise sensitive point: Norwegian - Yellow zone (718)	512,174	7,027,140	96.4	4.0	45.0	17.6	Yes
EB	Day						11.2	
EB	Evening						11.2	
EB	Night						11.2	
EC	Noise sensitive point: Norwegian - Yellow zone (719)	511,837	7,027,985	41.5	4.0	45.0	17.1	Yes
EC	Day						10.7	
EC	Evening						10.7	
EC	Night						10.7	
ED	Noise sensitive point: Norwegian - Yellow zone (720)	524,065	7,034,712	104.4	4.0	45.0	17.0	Yes
ED	Day						10.6	
ED	Evening						10.6	
ED	Night						10.6	
EE	Noise sensitive point: Norwegian - Yellow zone (721)	525,104	7,030,035	10.0	4.0	45.0	16.6	Yes
EE	Day						10.2	
EE	Evening						10.2	
EE	Night						10.2	
EF	Noise sensitive point: Norwegian - Yellow zone (722)	525,235	7,030,259	16.3	4.0	45.0	16.3	Yes
EF	Day						9.9	
EF	Evening						9.9	
EF	Night						9.9	
EG	Noise sensitive point: Norwegian - Yellow zone (723)	525,118	7,030,064	10.1	4.0	45.0	16.1	Yes
EG	Day						9.7	
EG	Evening						9.7	

To be continued on next page...



NORD2000 - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

...continued from previous page

Noise sensitive area

No.	Name	X(East)	Y(North)	Z [m]	Emission height [m]	Demands Noise [dB(A)]	Sound level From WTGs [dB(A)]	Demands fulfilled? Noise [dB(A)]
EG	Night					9.7		
EH	Noise sensitive point: Norwegian - Yellow zone (724)	525,245	7,030,347	26.1	4.0	45.0	15.9	Yes
EH	Day						9.6	
EH	Evening						9.6	
EH	Night						9.6	
EI	Noise sensitive point: Norwegian - Yellow zone (725)	525,171	7,030,241	15.0	4.0	45.0	15.6	Yes
EI	Day						9.2	
EI	Evening						9.2	
EI	Night						9.2	
EJ	Noise sensitive point: Norwegian - Yellow zone (726)	511,890	7,027,743	5.5	4.0	45.0	15.5	Yes
EJ	Day						9.1	
EJ	Evening						9.1	
EJ	Night						9.1	
EK	Noise sensitive point: Norwegian - Yellow zone (727)	525,076	7,030,012	5.0	4.0	45.0	15.3	Yes
EK	Day						8.9	
EK	Evening						8.9	
EK	Night						8.9	
EL	Noise sensitive point: Norwegian - Yellow zone (728)	511,897	7,027,798	6.3	4.0	45.0	15.3	Yes
EL	Day						8.9	
EL	Evening						8.9	
EL	Night						8.9	
EM	Noise sensitive point: Norwegian - Yellow zone (729)	525,140	7,030,544	36.4	4.0	45.0	15.1	Yes
EM	Day						8.7	
EM	Evening						8.7	
EM	Night						8.7	
EN	Noise sensitive point: Norwegian - Yellow zone (730)	525,097	7,030,087	11.5	4.0	45.0	14.9	Yes
EN	Day						8.5	
EN	Evening						8.5	
EN	Night						8.5	
EO	Noise sensitive point: Norwegian - Yellow zone (731)	525,130	7,030,431	33.4	4.0	45.0	14.6	Yes
EO	Day						8.2	
EO	Evening						8.2	
EO	Night						8.2	
EP	Noise sensitive point: Norwegian - Yellow zone (732)	511,936	7,027,846	16.8	4.0	45.0	14.5	Yes
EP	Day						8.1	
EP	Evening						8.1	
EP	Night						8.1	
EQ	Noise sensitive point: Norwegian - Yellow zone (733)	525,154	7,030,390	34.8	4.0	45.0	14.5	Yes
EQ	Day						8.1	
EQ	Evening						8.1	
EQ	Night						8.1	
ER	Noise sensitive point: Norwegian - Yellow zone (734)	525,126	7,030,486	35.4	4.0	45.0	13.1	Yes
ER	Day						6.7	
ER	Evening						6.7	
ER	Night						6.7	
ES	Noise sensitive point: Norwegian - Yellow zone (735)	525,136	7,030,339	21.5	4.0	45.0	13.1	Yes
ES	Day						6.7	
ES	Evening						6.7	
ES	Night						6.7	
ET	Noise sensitive point: Norwegian - Yellow zone (736)	525,163	7,030,354	29.4	4.0	45.0	12.5	Yes
ET	Day						6.1	
ET	Evening						6.1	
ET	Night						6.1	
EU	Noise sensitive point: Norwegian - Yellow zone (737)	525,065	7,030,183	14.5	4.0	45.0	12.4	Yes
EU	Day						6.0	
EU	Evening						6.0	
EU	Night						6.0	
EV	Noise sensitive point: Norwegian - Yellow zone (738)	524,751	7,030,045	1.8	4.0	45.0	11.5	Yes
EV	Day						5.1	
EV	Evening						5.1	
EV	Night						5.1	
EW	Noise sensitive point: Norwegian - Yellow zone (739)	524,759	7,030,078	2.8	4.0	45.0	10.9	Yes
EW	Day						4.5	
EW	Evening						4.5	
EW	Night						4.5	

To be continued on next page...



NORD2000 - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

...continued from previous page

Noise sensitive area

No.	Name	X(East)	Y(North)	Z [m]	Emission height [m]	Demands Noise [dB(A)]	Sound level From WTGs [dB(A)]	Demands fulfilled? Noise [dB(A)]
EX	Noise sensitive point: Norwegian - Yellow zone (740)	525,041	7,030,407	15.0	4.0	45.0	10.7	Yes
EX	Day						4.3	
EX	Evening						4.3	
EX	Night						4.3	
EY	Noise sensitive point: Norwegian - Yellow zone (741)	524,564	7,030,050	9.5	4.0	45.0	10.1	Yes
EY	Day						3.7	
EY	Evening						3.7	
EY	Night						3.7	
EZ	Noise sensitive point: Norwegian - Yellow zone (742)	524,666	7,030,074	3.7	4.0	45.0	10.0	Yes
EZ	Day						3.6	
EZ	Evening						3.6	
EZ	Night						3.6	
FA	Noise sensitive point: Norwegian - Yellow zone (743)	524,718	7,030,142	5.0	4.0	45.0	10.0	Yes
FA	Day						3.6	
FA	Evening						3.6	
FA	Night						3.6	
FB	Noise sensitive point: Norwegian - Yellow zone (744)	524,790	7,030,380	25.7	4.0	45.0	9.9	Yes
FB	Day						3.6	
FB	Evening						3.6	
FB	Night						3.6	
FC	Noise sensitive point: Norwegian - Yellow zone (745)	524,866	7,030,412	24.2	4.0	45.0	9.9	Yes
FC	Day						3.5	
FC	Evening						3.5	
FC	Night						3.5	
FD	Noise sensitive point: Norwegian - Yellow zone (746)	524,589	7,030,074	8.7	4.0	45.0	9.8	Yes
FD	Day						3.4	
FD	Evening						3.4	
FD	Night						3.4	
FE	Noise sensitive point: Norwegian - Yellow zone (747)	521,696	7,028,632	8.8	4.0	45.0	9.6	Yes
FE	Day						3.2	
FE	Evening						3.2	
FE	Night						3.2	
FF	Noise sensitive point: Norwegian - Yellow zone (748)	524,354	7,029,979	49.4	4.0	45.0	9.5	Yes
FF	Day						3.1	
FF	Evening						3.1	
FF	Night						3.1	
FG	Noise sensitive point: Norwegian - Yellow zone (749)	524,772	7,030,349	25.2	4.0	45.0	9.2	Yes
FG	Day						2.8	
FG	Evening						2.8	
FG	Night						2.8	
FH	Noise sensitive point: Norwegian - Yellow zone (750)	524,453	7,030,007	28.3	4.0	45.0	8.7	Yes
FH	Day						2.3	
FH	Evening						2.3	
FH	Night						2.3	
FI	Noise sensitive point: Norwegian - Yellow zone (751)	524,528	7,030,032	14.4	4.0	45.0	8.6	Yes
FI	Day						2.2	
FI	Evening						2.2	
FI	Night						2.2	
FJ	Noise sensitive point: Norwegian - Yellow zone (752)	524,692	7,030,182	7.9	4.0	45.0	8.3	Yes
FJ	Day						1.9	
FJ	Evening						1.9	
FJ	Night						1.9	
FK	Noise sensitive point: Norwegian - Yellow zone (753)	524,546	7,030,312	55.2	4.0	45.0	8.3	Yes
FK	Day						2.0	
FK	Evening						2.0	
FK	Night						2.0	
FL	Noise sensitive point: Norwegian - Yellow zone (754)	524,496	7,030,017	20.1	4.0	45.0	7.8	Yes
FL	Day						1.4	
FL	Evening						1.4	
FL	Night						1.4	
FM	Noise sensitive point: Norwegian - Yellow zone (755)	518,545	7,027,472	3.7	4.0	45.0	7.0	Yes
FM	Day						0.6	
FM	Evening						0.6	
FM	Night						0.6	
FN	Noise sensitive point: Norwegian - Yellow zone (756)	524,564	7,030,152	37.3	4.0	45.0	7.0	Yes

To be continued on next page...

Project:

Svarthammaren

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Calculated:

14.01.2019 15:02/3.2.737



NORD2000 - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

...continued from previous page

Noise sensitive area

No.	Name	X(East)	Y(North)	Z [m]	Imission height [m]	Demands Noise [dB(A)]	Sound level From WTGs [dB(A)]	Demands fulfilled? Noise [dB(A)]
	FN Day						0.7	
	FN Evening						0.7	
	FN Night						0.7	
	FO Noise sensitive point: Norwegian - Yellow zone (757)	524,653	7,030,142	8.3	4.0	45.0	7.0	Yes
	FO Day						0.6	
	FO Evening						0.6	
	FO Night						0.6	
	FP Noise sensitive point: Norwegian - Yellow zone (758)	524,622	7,030,202	33.2	4.0	45.0	6.5	Yes
	FP Day						0.1	
	FP Evening						0.1	
	FP Night						0.1	

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: Layout 007** - Worst Case (noise opt.)

Assumptions

Weather stability
Relative humidity 70.0 %
Air temperature 5.1 °C
Height for air temperature 100.0 m
Stability parameters Night; Clear sky
Inverse Monin Obukhov length 0.0100
Temperature scale T* 0.0500

Terrain

Elevation based on object
 201101_Height contours_Svarthammaren
Roughness based on line object
 Roughness Lines: Snillfjord_roulines_rough.wpo (5)
Terrain type based on area object
 Terrain Hardness
Month for calculation January

Wind speed criteria

Uniform wind speed at 10 m agl.
Wind speed Max noise wind speed
Max noise wind speed All receptors downwind
Wind direction 4.0 m
Height above ground level for receiver
Wind speed has been extrapolated to calculation height using
 IEC profile shear ($z_0 = 0.05\text{m}$)
No stability correction 5.022
Version

All coordinates are in
 UTM WGS84 Zone: 32

Setup for Lden calculation

Variant	Name	From hour	To hour	Hours	Penalty [dB]	Days per year
1	Day	7	19	12	0	365
2	Evening	19	23	4	5	365
3	Night	23	7	8	10	365

Project:

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: Layout 007** - Worst Case (noise opt.)

WTG: Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O!

Noise: 104.0 dB (with serrated blades)

Source	Source/Date	Creator	Edited
	13.07.2016	USER	06.11.2018 13:15

Wind speed	LwA,ref
[m/s]	[dB(A)]
3.0	91.8
4.0	92.1
5.0	94.0
6.0	97.0
7.0	100.1
8.0	102.9
9.0	104.0
10.0	104.0
11.0	104.0
12.0	104.0
13.0	104.0
14.0	104.0
15.0	104.0
16.0	104.0
17.0	104.0
18.0	104.0
19.0	104.0
20.0	104.0

NSA: Noise sensitive point: Norwegian - Yellow zone (587)-A

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (588)-B

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (589)-C

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (590)-D

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (591)-E

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (592)-F

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (593)-G

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

Project:

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: Layout 007** - Worst Case (noise opt.)

NSA: Noise sensitive point: Norwegian - Yellow zone (594)-H

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (595)-I

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (596)-J

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (597)-K

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (598)-L

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (599)-M

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (600)-N

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (601)-O

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (602)-P

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (603)-Q

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (604)-R

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: Layout 007** - Worst Case (noise opt.)

NSA: Noise sensitive point: Norwegian - Yellow zone (605)-S

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (606)-T

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (607)-U

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (608)-V

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (609)-W

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (610)-X

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (611)-Y

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (612)-Z

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (613)-AA

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (614)-AB

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (615)-AC

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

Project:

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: Layout 007** - Worst Case (noise opt.)

NSA: Noise sensitive point: Norwegian - Yellow zone (616)-AD

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (617)-AE

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (618)-AF

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (619)-AG

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (620)-AH

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (621)-AI

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (622)-AJ

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (623)-AK

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (624)-AL

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (625)-AM

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (626)-AN

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

Project:

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: Layout 007** - Worst Case (noise opt.)

NSA: Noise sensitive point: Norwegian - Yellow zone (627)-AO

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (628)-AP

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (629)-AQ

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (630)-AR

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (631)-AS

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (632)-AT

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (633)-AU

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (634)-AV

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (635)-AW

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (636)-AX

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (637)-AY

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: Layout 007** - Worst Case (noise opt.)

NSA: Noise sensitive point: Norwegian - Yellow zone (638)-AZ

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (639)-BA

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (640)-BB

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (641)-BC

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (642)-BD

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (643)-BE

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (644)-BF

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (645)-BG

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (646)-BH

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (647)-BI

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (648)-BJ

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: Layout 007** - Worst Case (noise opt.)

NSA: Noise sensitive point: Norwegian - Yellow zone (649)-BK

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (650)-BL

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (651)-BM

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (652)-BN

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (653)-BO

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (654)-BP

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (655)-BQ

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (656)-BR

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (657)-BS

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (658)-BT

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (659)-BU

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: Layout 007** - Worst Case (noise opt.)

NSA: Noise sensitive point: Norwegian - Yellow zone (660)-BV

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (661)-BW

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (662)-BX

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (663)-BY

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (664)-BZ

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (665)-CA

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (666)-CB

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (667)-CC

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (668)-CD

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (669)-CE

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (670)-CF

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: Layout 007** - Worst Case (noise opt.)

NSA: Noise sensitive point: Norwegian - Yellow zone (671)-CG

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (672)-CH

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (673)-CI

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (674)-CJ

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (675)-CK

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (676)-CL

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (677)-CM

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (678)-CN

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (679)-CO

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (680)-CP

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (681)-CQ

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: Layout 007** - Worst Case (noise opt.)

NSA: Noise sensitive point: Norwegian - Yellow zone (682)-CR

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (683)-CS

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (684)-CT

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (685)-CU

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (686)-CV

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (687)-CW

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (688)-CX

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (689)-CY

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (690)-CZ

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (691)-DA

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (692)-DB

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: Layout 007** - Worst Case (noise opt.)

NSA: Noise sensitive point: Norwegian - Yellow zone (693)-DC

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (694)-DD

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (695)-DE

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (696)-DF

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (697)-DG

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (698)-DH

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (699)-DI

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (700)-DJ

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (701)-DK

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (702)-DL

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (703)-DM

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: Layout 007** - Worst Case (noise opt.)

NSA: Noise sensitive point: Norwegian - Yellow zone (704)-DN

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (705)-DO

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (706)-DP

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (707)-DQ

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (708)-DR

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (709)-DS

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (710)-DT

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (711)-DU

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (712)-DV

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (713)-DW

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (714)-DX

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: Layout 007** - Worst Case (noise opt.)

NSA: Noise sensitive point: Norwegian - Yellow zone (715)-DY

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (716)-DZ

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (717)-EA

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (718)-EB

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (719)-EC

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (720)-ED

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (721)-EE

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (722)-EF

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (723)-EG

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (724)-EH

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (725)-EI

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: Layout 007** - Worst Case (noise opt.)

NSA: Noise sensitive point: Norwegian - Yellow zone (726)-EJ

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (727)-EK

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (728)-EL

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (729)-EM

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (730)-EN

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (731)-EO

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (732)-EP

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (733)-EQ

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (734)-ER

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (735)-ES

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (736)-ET

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: Layout 007** - Worst Case (noise opt.)

NSA: Noise sensitive point: Norwegian - Yellow zone (737)-EU

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (738)-EV

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (739)-EW

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (740)-EX

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (741)-EY

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (742)-EZ

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (743)-FA

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (744)-FB

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (745)-FC

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (746)-FD

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (747)-FE

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

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NORD2000 - Assumptions for NORD2000 calculation

Calculation: Layout 007** - Worst Case (noise opt.)

NSA: Noise sensitive point: Norwegian - Yellow zone (748)-FF

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (749)-FG

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (750)-FH

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (751)-FI

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (752)-FJ

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (753)-FK

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (754)-FL

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (755)-FM

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (756)-FN

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (757)-FO

Predefined calculation standard: Yellow zone

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

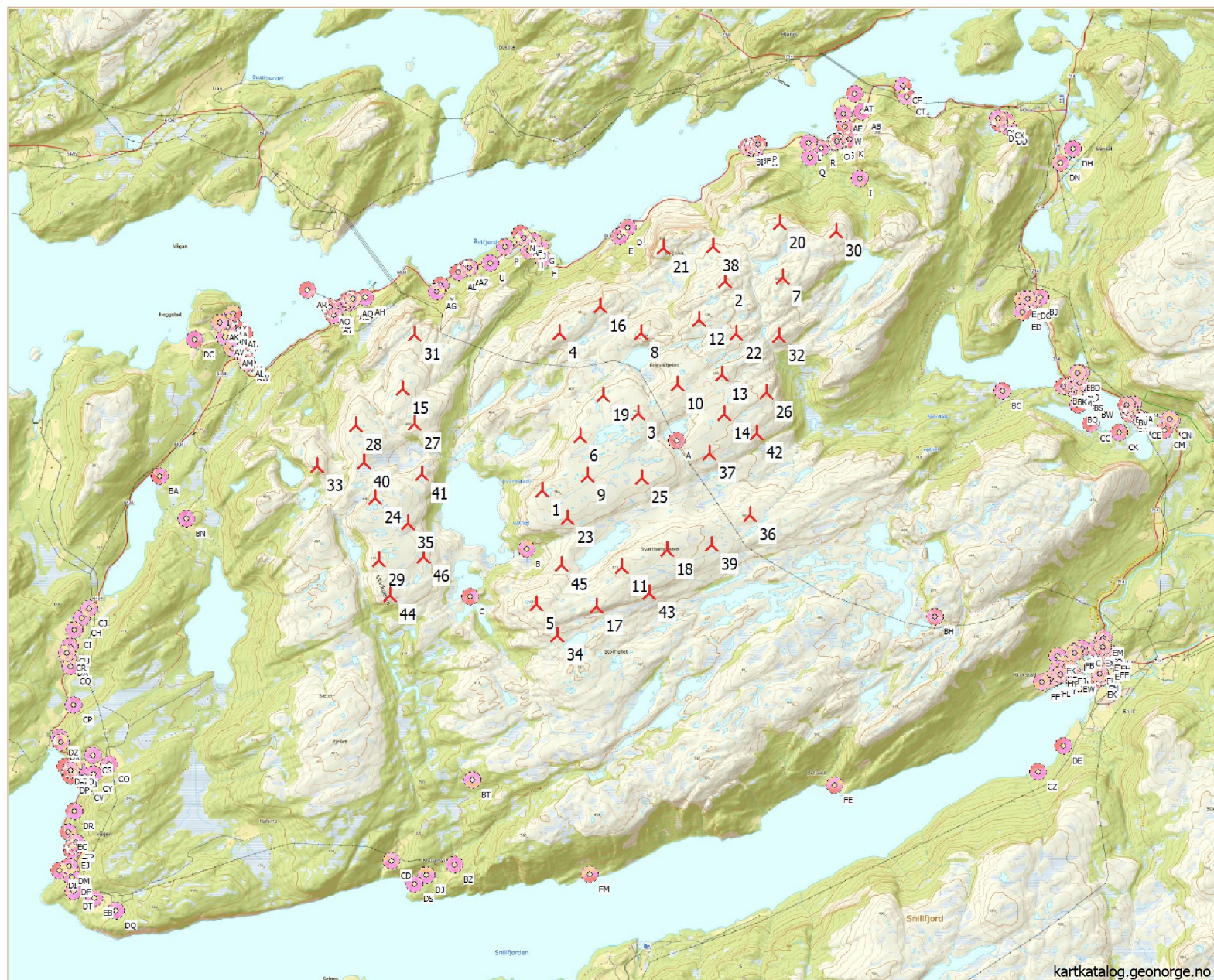
Distance demand: 0.0 m

NSA: Noise sensitive point: Norwegian - Yellow zone (758)-FP

Predefined calculation standard: Yellow zone

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

Distance demand: 0.0 m



NORD2000 -

Calculation:
Layout 007** - Worst Case (noise opt.)

Licensed user:
Meventus AS
Kongsgård Allé 59
NO-4632 Kristiansand
+47 3860 7115
Data / data@meventus.com
Calculated:
14.01.2019 15:02/3.2.737



▲ New WTG

Map: Topografisk norgeskart , Print scale 1:75,000, Map center UTM WGS84 Zone: 32 East: 518,855 North: 7,032,290
■ Noise sensitive area

Project:

Svarthammaren

Licensed user:

Meventus AS

Kongsgård Allé 59

NO-4632 Kristiansand

+47 3860 7115

Data / data@meventus.com

Calculated:

14.01.2019 16:03/3.2.737



SHADOW - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

Assumptions for shadow calculations

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade

Please look in WTG table

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50

Operational hours are calculated from WTGs in calculation and wind distribution:
EmdConvX_N63.440_E009.410 (187)

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
432	286	201	384	672	684	530	831	1,735	1,324	644	466	8,190

Idle start wind speed: Cut in wind speed from power curve

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:

Height contours used: 201101_Height contours_Svarthammaren

Obstacles not used in calculation

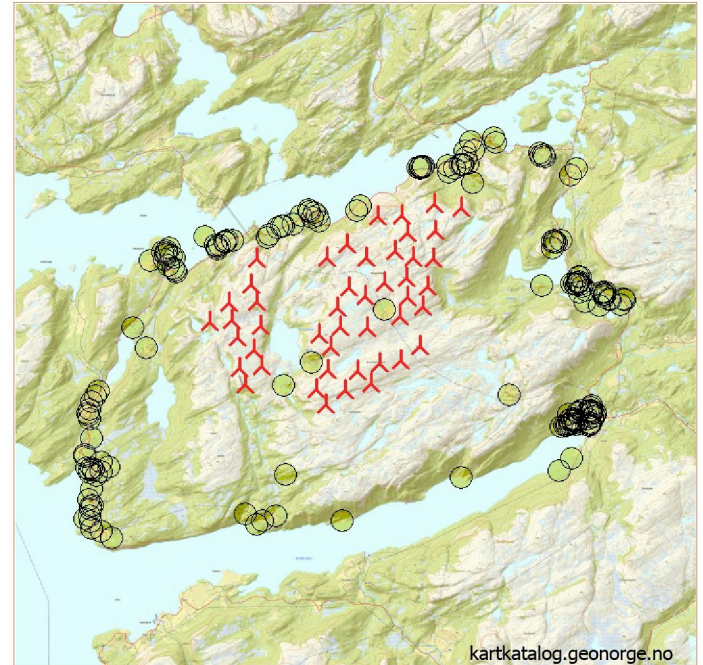
Eye height for map: 1.5 m

Grid resolution: 1.0 m

All coordinates are in

UTM WGS84 Zone: 32

WTGs



▲ New WTG

Scale 1:200,000
● Shadow receptor

	X(East)	Y(North)	Z	Row data/Description	WTG type		Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.				Calculation distance [m]	RPM
			[m]								[RPM]
1	517,914	7,032,388	560.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
2	520,238	7,035,088	509.9	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
3	519,138	7,033,388	540.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
4	518,114	7,034,413	475.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
5	517,838	7,030,938	570.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
6	518,388	7,033,088	540.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
7	520,988	7,035,138	500.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
8	519,164	7,034,413	510.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
9	518,488	7,032,588	542.3	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
10	519,638	7,033,763	540.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
11	518,938	7,031,413	560.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
12	519,914	7,034,588	528.4	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
13	520,214	7,033,888	520.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
14	520,238	7,033,388	520.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
15	516,114	7,033,688	456.9	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
16	518,640	7,034,758	464.5	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
17	518,614	7,030,913	560.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
18	519,514	7,031,638	540.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
19	518,688	7,033,613	519.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
20	520,938	7,035,838	435.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
21	519,447	7,035,509	423.6	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
22	520,388	7,034,413	516.2	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
23	518,238	7,032,038	535.8	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
24	515,764	7,032,288	480.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
25	519,188	7,032,563	520.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
26	520,788	7,033,663	487.2	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
27	516,264	7,033,238	460.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
28	515,514	7,033,213	460.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
29	515,814	7,031,488	460.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
30	521,664	7,035,738	420.0	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7
31	516,256	7,034,384	369.4	Generic 6 MW RD 155 - 6.0MW 6000 155....Yes	Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7

To be continued on next page...



SHADOW - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

...continued from previous page

				WTG type								Shadow data	
X(East)	Y(North)	Z	Row data/Description	Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Calculation distance [m]	RPM		
		[m]									[RPM]		
32	520,938	7,034,388	477.5 Generic 6 MW RD 155 - 6.0MW 6000 155....Yes		Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7		
33	515,014	7,032,688	420.0 Generic 6 MW RD 155 - 6.0MW 6000 155....Yes		Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7		
34	518,114	7,030,538	507.2 Generic 6 MW RD 155 - 6.0MW 6000 155....Yes		Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7		
35	516,188	7,031,963	460.0 Generic 6 MW RD 155 - 6.0MW 6000 155....Yes		Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7		
36	520,588	7,032,088	484.9 Generic 6 MW RD 155 - 6.0MW 6000 155....Yes		Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7		
37	520,052	7,032,882	500.0 Generic 6 MW RD 155 - 6.0MW 6000 155....Yes		Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7		
38	520,088	7,035,538	409.1 Generic 6 MW RD 155 - 6.0MW 6000 155....Yes		Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7		
39	520,088	7,031,713	480.4 Generic 6 MW RD 155 - 6.0MW 6000 155....Yes		Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7		
40	515,614	7,032,738	440.0 Generic 6 MW RD 155 - 6.0MW 6000 155....Yes		Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7		
41	516,364	7,032,588	440.0 Generic 6 MW RD 155 - 6.0MW 6000 155....Yes		Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7		
42	520,664	7,033,138	452.2 Generic 6 MW RD 155 - 6.0MW 6000 155....Yes		Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7		
43	519,288	7,031,088	499.8 Generic 6 MW RD 155 - 6.0MW 6000 155....Yes		Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7		
44	515,964	7,031,038	434.5 Generic 6 MW RD 155 - 6.0MW 6000 155....Yes		Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7		
45	518,164	7,031,438	484.0 Generic 6 MW RD 155 - 6.0MW 6000 155....Yes		Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7		
46	516,388	7,031,538	420.0 Generic 6 MW RD 155 - 6.0MW 6000 155....Yes		Generic 6 MW	RD 155 - 6.0MW-6,000	6,000	155.0	150.0	1,813	11.7		

Shadow receptor-Input

No.	X(East)	Y(North)	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
A	519,632	7,033,042	481.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
B	517,714	7,031,642	330.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
C	516,987	7,031,027	330.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
D	518,986	7,035,769	25.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
E	518,879	7,035,649	52.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
F	517,904	7,035,365	27.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0
G	517,861	7,035,523	39.6	2.0	2.0	2.0	90.0	"Green house mode"	4.0
H	517,719	7,035,461	92.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
I	521,970	7,036,412	210.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
J	517,778	7,035,585	63.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0
K	521,832	7,036,922	10.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
L	521,305	7,036,867	20.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
M	515,269	7,034,714	21.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
N	517,614	7,035,682	11.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
O	521,635	7,036,883	4.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0
P	517,414	7,035,512	40.3	2.0	2.0	2.0	90.0	"Green house mode"	4.0
Q	521,327	7,036,676	35.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
R	521,468	7,036,797	10.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
S	521,713	7,036,895	4.3	2.0	2.0	2.0	90.0	"Green house mode"	4.0
T	514,077	7,034,383	7.3	2.0	2.0	2.0	90.0	"Green house mode"	4.0
U	517,228	7,035,298	66.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
V	513,877	7,034,520	8.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
W	521,770	7,037,077	12.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
X	516,589	7,035,014	22.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
Y	513,934	7,034,633	8.6	2.0	2.0	2.0	90.0	"Green house mode"	4.0
Z	521,668	7,036,884	5.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AA	513,860	7,034,553	20.6	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AB	521,987	7,037,272	30.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AC	515,427	7,034,791	37.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AD	516,817	7,035,188	20.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AE	521,747	7,037,244	23.6	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AF	517,654	7,035,631	28.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AG	516,539	7,034,931	30.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AH	515,631	7,034,858	17.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AI	513,994	7,034,435	5.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AJ	515,407	7,034,826	20.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AK	513,763	7,034,526	43.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AL	514,094	7,034,052	7.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AM	513,922	7,034,185	33.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AN	513,854	7,034,468	11.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AO	515,173	7,034,724	2.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AP	520,654	7,036,842	5.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AQ	515,462	7,034,838	16.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0

To be continued on next page...



SHADOW - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

...continued from previous page

No.	X(East)	Y(North)	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
AR	514,880	7,034,943	11.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AS	515,203	7,034,679	9.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AT	521,891	7,037,497	10.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AU	514,049	7,034,112	6.5	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AV	513,831	7,034,333	50.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AW	514,115	7,034,002	5.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AX	516,914	7,035,230	20.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AY	515,214	7,034,625	13.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
AZ	516,955	7,035,241	22.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BA	512,992	7,032,543	30.3	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BB	524,781	7,033,942	161.6	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BC	523,815	7,033,707	105.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BD	524,826	7,033,942	152.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BE	524,602	7,033,767	107.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BF	520,596	7,036,820	5.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BG	524,739	7,033,802	120.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BH	522,970	7,030,802	392.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BI	520,516	7,036,805	6.3	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BJ	524,295	7,034,912	105.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BK	524,665	7,033,755	115.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BL	524,780	7,033,796	120.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BM	524,710	7,033,736	115.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BN	513,345	7,032,002	78.6	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BO	524,807	7,033,814	113.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BP	525,411	7,033,532	115.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BQ	524,787	7,033,534	119.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BR	524,828	7,033,748	115.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BS	524,875	7,033,685	115.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BT	517,037	7,028,672	288.6	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BU	520,551	7,036,791	9.5	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BV	525,446	7,033,497	115.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BW	524,976	7,033,598	115.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BX	525,454	7,033,422	115.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BY	525,453	7,033,458	115.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
BZ	516,811	7,027,583	94.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CA	525,496	7,033,550	125.6	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CB	520,580	7,036,795	9.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CC	524,958	7,033,290	115.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CD	515,997	7,027,632	66.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CE	525,614	7,033,342	117.3	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CF	522,513	7,037,607	6.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CG	525,586	7,033,362	117.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CH	511,999	7,030,722	40.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CI	511,900	7,030,573	40.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CJ	512,090	7,030,848	37.6	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CK	525,323	7,033,182	120.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CL	525,964	7,033,359	131.5	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CM	525,896	7,033,212	120.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CN	525,994	7,033,337	130.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CO	512,358	7,028,851	93.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CP	511,901	7,029,613	11.3	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CQ	511,858	7,030,109	17.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CR	511,806	7,030,275	37.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CS	512,150	7,028,966	75.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CT	522,559	7,037,467	10.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CU	511,851	7,030,363	42.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CV	512,047	7,028,613	13.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CW	520,640	7,036,799	6.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CX	523,829	7,037,166	72.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CY	512,159	7,028,724	43.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0
CZ	524,309	7,028,822	15.6	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DA	511,834	7,030,212	30.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DB	511,957	7,028,786	24.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DC	513,439	7,034,304	12.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DD	523,855	7,037,095	73.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0

To be continued on next page...



SHADOW - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

...continued from previous page

No.	X(East)	Y(North)	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
DE	524,630	7,029,162	6.6	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DF	511,888	7,027,405	70.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DG	524,179	7,034,862	98.6	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DH	524,697	7,036,818	10.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DI	511,727	7,027,483	20.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DJ	516,443	7,027,450	46.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DK	524,129	7,034,850	100.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DL	511,868	7,028,775	10.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DM	511,853	7,027,548	35.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DN	524,539	7,036,630	15.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DO	511,901	7,028,822	21.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DP	511,861	7,028,703	2.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DQ	512,449	7,026,973	111.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DR	511,915	7,028,254	23.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DS	516,294	7,027,340	21.6	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DT	511,906	7,027,224	81.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DU	511,792	7,028,823	1.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DV	523,737	7,037,196	60.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DW	523,754	7,037,130	60.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DX	511,737	7,029,131	9.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DY	524,129	7,034,892	103.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
DZ	511,717	7,029,190	6.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EA	524,065	7,034,882	110.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EB	512,174	7,027,140	96.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EC	511,837	7,027,985	41.5	2.0	2.0	2.0	90.0	"Green house mode"	4.0
ED	524,065	7,034,712	104.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EE	525,104	7,030,035	10.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EF	525,235	7,030,259	16.3	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EG	525,118	7,030,064	10.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EH	525,245	7,030,347	26.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EI	525,171	7,030,241	15.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EJ	511,890	7,027,743	5.5	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EK	525,076	7,030,012	5.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EL	511,897	7,027,798	6.3	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EM	525,140	7,030,544	36.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EN	525,097	7,030,087	11.5	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EO	525,130	7,030,431	33.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EP	511,936	7,027,846	16.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EQ	525,154	7,030,390	34.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
ER	525,126	7,030,486	35.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
ES	525,136	7,030,339	21.5	2.0	2.0	2.0	90.0	"Green house mode"	4.0
ET	525,163	7,030,354	29.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EU	525,065	7,030,183	14.5	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EV	524,751	7,030,045	1.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EW	524,759	7,030,078	2.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EX	525,041	7,030,407	15.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EY	524,564	7,030,050	9.5	2.0	2.0	2.0	90.0	"Green house mode"	4.0
EZ	524,666	7,030,074	3.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
FA	524,718	7,030,142	5.0	2.0	2.0	2.0	90.0	"Green house mode"	4.0
FB	524,790	7,030,380	25.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
FC	524,866	7,030,412	24.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0
FD	524,589	7,030,074	8.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
FE	521,696	7,028,632	8.8	2.0	2.0	2.0	90.0	"Green house mode"	4.0
FF	524,354	7,029,979	49.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
FG	524,772	7,030,349	25.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0
FH	524,453	7,030,007	28.3	2.0	2.0	2.0	90.0	"Green house mode"	4.0
FI	524,528	7,030,032	14.4	2.0	2.0	2.0	90.0	"Green house mode"	4.0
FJ	524,692	7,030,182	7.9	2.0	2.0	2.0	90.0	"Green house mode"	4.0
FK	524,546	7,030,312	55.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0
FL	524,496	7,030,017	20.1	2.0	2.0	2.0	90.0	"Green house mode"	4.0
FM	518,545	7,027,472	3.7	2.0	2.0	2.0	90.0	"Green house mode"	4.0
FN	524,564	7,030,152	37.3	2.0	2.0	2.0	90.0	"Green house mode"	4.0
FO	524,653	7,030,142	8.3	2.0	2.0	2.0	90.0	"Green house mode"	4.0
FP	524,622	7,030,202	33.2	2.0	2.0	2.0	90.0	"Green house mode"	4.0

Project:

Svarthammaren

Licensed user:

Meventus AS

Kongsgård Allé 59

NO-4632 Kristiansand

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Data / data@meventus.com

Calculated:

14.01.2019 16:03/3.2.737



SHADOW - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

Calculation Results

Shadow receptor

No.	Shadow, worst case		Shadow, expected values	
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
A	334:09	313	1:45	102:10
B	208:50	203	1:24	60:57
C	117:11	178	1:08	36:12
D	28:43	59	0:45	8:27
E	35:03	68	0:48	10:04
F	48:13	129	0:33	13:48
G	36:11	103	0:29	10:07
H	34:25	99	0:29	9:46
I	51:02	81	1:11	16:02
J	31:32	96	0:28	8:45
K	20:11	43	0:47	6:04
L	24:35	46	0:52	6:55
M	29:30	78	0:32	8:29
N	17:58	57	0:24	4:46
O	22:27	45	0:50	6:40
P	26:10	75	0:35	7:32
Q	32:16	54	0:58	9:15
R	26:15	48	0:54	7:36
S	21:45	44	0:49	6:31
T	0:00	0	0:00	0:00
U	29:54	77	0:37	8:41
V	0:00	0	0:00	0:00
W	17:36	41	0:43	5:16
X	27:30	50	0:42	8:32
Y	0:00	0	0:00	0:00
Z	22:08	45	0:49	6:36
AA	0:00	0	0:00	0:00
AB	7:46	27	0:22	2:14
AC	40:31	106	0:35	11:32
AD	31:26	70	0:52	9:38
AE	15:26	39	0:39	4:36
AF	9:51	31	0:25	2:38
AG	36:33	60	0:47	11:19
AH	28:21	55	0:39	7:50
AI	0:00	0	0:00	0:00
AJ	37:21	102	0:34	10:35
AK	0:00	0	0:00	0:00
AL	13:45	51	0:21	3:49
AM	0:00	0	0:00	0:00
AN	0:00	0	0:00	0:00
AO	32:54	99	0:30	9:15
AP	21:32	45	0:46	5:37
AQ	22:17	49	0:35	6:26
AR	8:58	30	0:23	2:39
AS	28:16	78	0:31	8:06
AT	0:00	0	0:00	0:00
AU	6:20	24	0:20	1:41
AV	0:00	0	0:00	0:00
AW	14:27	52	0:22	4:01
AX	14:25	36	0:31	4:33
AY	31:21	84	0:32	9:04
AZ	13:51	36	0:30	4:23
BA	0:00	0	0:00	0:00
BB	0:00	0	0:00	0:00
BC	0:00	0	0:00	0:00
BD	0:00	0	0:00	0:00
BE	0:00	0	0:00	0:00
BF	7:48	27	0:23	2:01
BG	0:00	0	0:00	0:00
BH	0:00	0	0:00	0:00
BI	6:40	25	0:21	2:06
BJ	0:00	0	0:00	0:00
BK	0:00	0	0:00	0:00

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Project:

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Calculated:

14.01.2019 16:03/3.2.737



SHADOW - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

...continued from previous page

No.	Shadow, worst case			Shadow, expected values	
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]	
BL	0:00	0	0:00	0:00	
BM	0:00	0	0:00	0:00	
BN	0:00	0	0:00	0:00	
BO	0:00	0	0:00	0:00	
BP	0:00	0	0:00	0:00	
BQ	0:00	0	0:00	0:00	
BR	0:00	0	0:00	0:00	
BS	0:00	0	0:00	0:00	
BT	0:00	0	0:00	0:00	
BU	6:30	24	0:20	2:03	
BV	0:00	0	0:00	0:00	
BW	0:00	0	0:00	0:00	
BX	0:00	0	0:00	0:00	
BY	0:00	0	0:00	0:00	
BZ	0:00	0	0:00	0:00	
CA	0:00	0	0:00	0:00	
CB	0:00	0	0:00	0:00	
CC	0:00	0	0:00	0:00	
CD	0:00	0	0:00	0:00	
CE	0:00	0	0:00	0:00	
CF	0:00	0	0:00	0:00	
CG	0:00	0	0:00	0:00	
CH	0:00	0	0:00	0:00	
CI	0:00	0	0:00	0:00	
CJ	0:00	0	0:00	0:00	
CK	0:00	0	0:00	0:00	
CL	0:00	0	0:00	0:00	
CM	0:00	0	0:00	0:00	
CN	0:00	0	0:00	0:00	
CO	0:00	0	0:00	0:00	
CP	0:00	0	0:00	0:00	
CQ	0:00	0	0:00	0:00	
CR	0:00	0	0:00	0:00	
CS	0:00	0	0:00	0:00	
CT	0:00	0	0:00	0:00	
CU	0:00	0	0:00	0:00	
CV	0:00	0	0:00	0:00	
CW	0:00	0	0:00	0:00	
CX	0:00	0	0:00	0:00	
CY	0:00	0	0:00	0:00	
CZ	0:00	0	0:00	0:00	
DA	0:00	0	0:00	0:00	
DB	0:00	0	0:00	0:00	
DC	0:00	0	0:00	0:00	
DD	0:00	0	0:00	0:00	
DE	0:00	0	0:00	0:00	
DF	0:00	0	0:00	0:00	
DG	0:00	0	0:00	0:00	
DH	0:00	0	0:00	0:00	
DI	0:00	0	0:00	0:00	
DJ	0:00	0	0:00	0:00	
DK	0:00	0	0:00	0:00	
DL	0:00	0	0:00	0:00	
DM	0:00	0	0:00	0:00	
DN	0:00	0	0:00	0:00	
DO	0:00	0	0:00	0:00	
DP	0:00	0	0:00	0:00	
DQ	0:00	0	0:00	0:00	
DR	0:00	0	0:00	0:00	
DS	0:00	0	0:00	0:00	
DT	0:00	0	0:00	0:00	
DU	0:00	0	0:00	0:00	
DV	0:00	0	0:00	0:00	
DW	0:00	0	0:00	0:00	

To be continued on next page...

Project:

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Calculated:

14.01.2019 16:03/3.2.737



SHADOW - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

...continued from previous page

No.	Shadow, worst case			Shadow, expected values	
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]	
DX	0:00	0	0:00	0:00	
DY	0:00	0	0:00	0:00	
DZ	0:00	0	0:00	0:00	
EA	0:00	0	0:00	0:00	
EB	0:00	0	0:00	0:00	
EC	0:00	0	0:00	0:00	
ED	0:00	0	0:00	0:00	
EE	0:00	0	0:00	0:00	
EF	0:00	0	0:00	0:00	
EG	0:00	0	0:00	0:00	
EH	0:00	0	0:00	0:00	
EI	0:00	0	0:00	0:00	
EJ	0:00	0	0:00	0:00	
EK	0:00	0	0:00	0:00	
EL	0:00	0	0:00	0:00	
EM	0:00	0	0:00	0:00	
EN	0:00	0	0:00	0:00	
EO	0:00	0	0:00	0:00	
EP	0:00	0	0:00	0:00	
EQ	0:00	0	0:00	0:00	
ER	0:00	0	0:00	0:00	
ES	0:00	0	0:00	0:00	
ET	0:00	0	0:00	0:00	
EU	0:00	0	0:00	0:00	
EV	0:00	0	0:00	0:00	
EW	0:00	0	0:00	0:00	
EX	0:00	0	0:00	0:00	
EY	0:00	0	0:00	0:00	
EZ	0:00	0	0:00	0:00	
FA	0:00	0	0:00	0:00	
FB	0:00	0	0:00	0:00	
FC	0:00	0	0:00	0:00	
FD	0:00	0	0:00	0:00	
FE	0:00	0	0:00	0:00	
FF	0:00	0	0:00	0:00	
FG	0:00	0	0:00	0:00	
FH	0:00	0	0:00	0:00	
FI	0:00	0	0:00	0:00	
FJ	0:00	0	0:00	0:00	
FK	0:00	0	0:00	0:00	
FL	0:00	0	0:00	0:00	
FM	0:00	0	0:00	0:00	
FN	0:00	0	0:00	0:00	
FO	0:00	0	0:00	0:00	
FP	0:00	0	0:00	0:00	

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Expected [h/year]
1	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8518)	0:00	0:00
2	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8519)	0:00	0:00
3	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8520)	0:00	0:00
4	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8521)	81:11	22:08
5	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8522)	74:46	22:15
6	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8523)	15:05	4:49
7	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8524)	7:48	2:28
8	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8525)	17:46	4:45
9	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8526)	13:50	4:33
10	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8527)	0:00	0:00
11	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8528)	23:55	7:19
12	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8529)	0:00	0:00
13	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8530)	0:00	0:00
14	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8531)	43:06	14:14

To be continued on next page...

Project:

Svarthammaren

Licensed user:

Meventus AS

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NO-4632 Kristiansand

+47 3860 7115

Data / data@meventus.com

Calculated:

14.01.2019 16:03/3.2.737



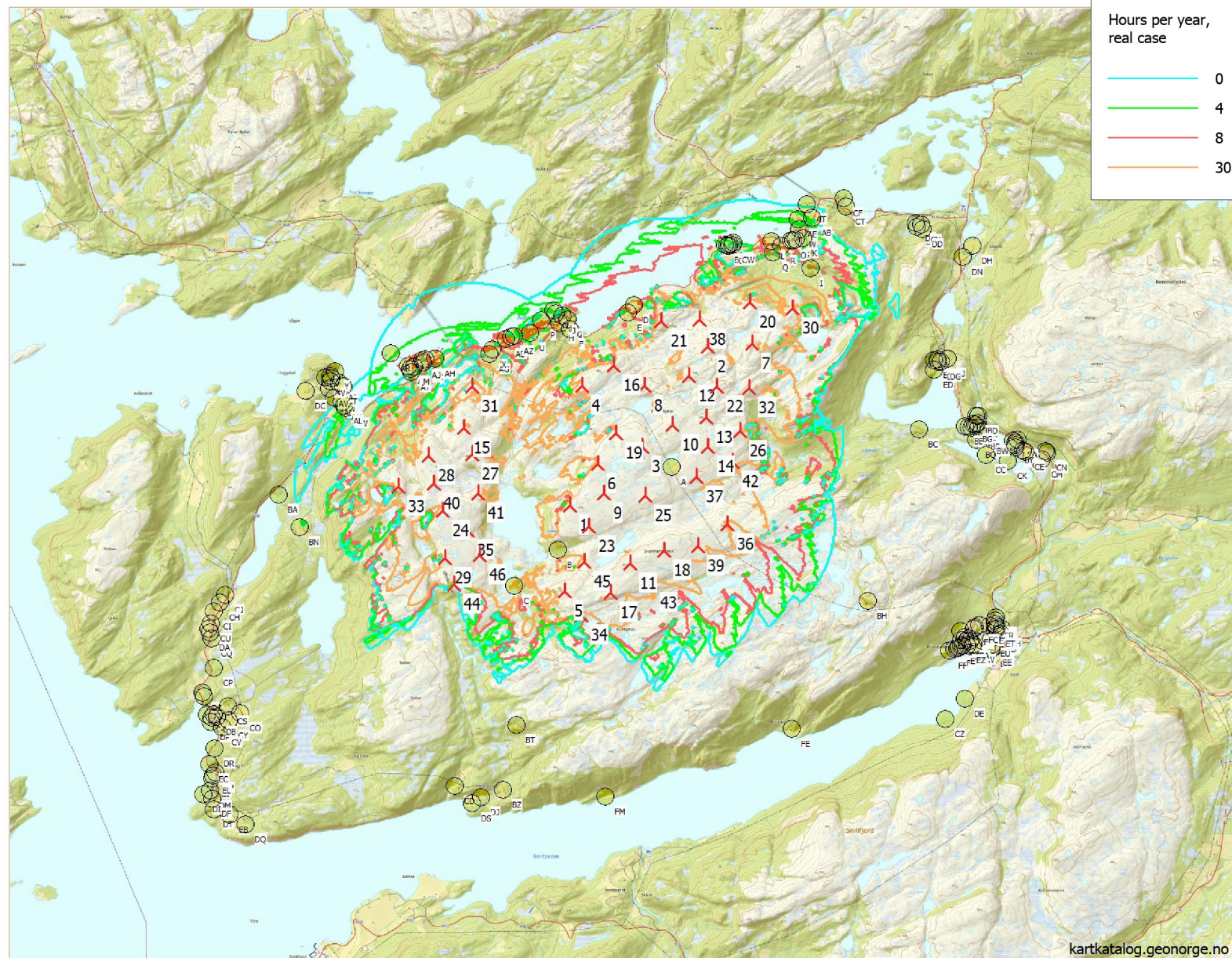
SHADOW - Main Result

Calculation: Layout 007** - Worst Case (noise opt.)

...continued from previous page

No.	Name	Worst case [h/year]	Expected [h/year]
15	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8532)	34:55	9:31
16	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8533)	93:02	25:55
17	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8534)	14:05	3:50
18	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8535)	17:24	5:00
19	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8536)	41:27	11:54
20	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8537)	95:26	29:13
21	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8538)	45:38	14:40
22	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8539)	0:00	0:00
23	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8540)	7:45	2:32
24	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8541)	0:00	0:00
25	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8542)	46:18	14:38
26	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8543)	21:08	6:59
27	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8544)	0:00	0:00
28	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8545)	25:02	6:58
29	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8546)	34:47	10:20
30	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8547)	123:59	35:02
31	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8548)	196:01	59:03
32	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8549)	0:00	0:00
33	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8550)	9:22	2:30
34	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8551)	13:16	3:55
35	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8552)	11:12	3:25
36	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8553)	0:00	0:00
37	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8554)	101:11	30:06
38	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8555)	0:00	0:00
39	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8556)	19:43	5:12
40	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8557)	0:00	0:00
41	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8558)	20:40	5:48
42	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8559)	0:00	0:00
43	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8560)	0:00	0:00
44	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8561)	23:41	7:36
45	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8562)	107:14	31:38
46	Generic 6 MW RD 155 - 6.0MW 6000 155.0 !O! hub: 150.0 m (TOT: 227.5 m) (8563)	12:24	4:01

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.



Project:

Svarthammaren

SHADOW - Map

Calculation:

Layout 007** - Worst Case (noise opt.)

Licensed user:

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Calculated:

14.01.2019 16:03/3.2.737



New WTG

Shadow receptor