

Marlec Eng Co Ltd



Report on Noise Measurement Tests of FM910-4 Wind Turbine

Date of Tests: 6th December 2013

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Conditions of the Test

Tests were conducted positioning the dB meter at the turbine hub height +50% of the rotor diameter (based on the noise measurement standard). Samples were taken every second for a sample run of 10 minutes with the turbine running and the turbine stalled (ie background noise). Readings were taken of all parameters simultaneously on a datalogging system.

Three test runs were taken of each, ie turbine running and stalled and conducted sequentially alternately running/stalled. Information was also noted for Barometric pressure, humidity and temperature for the duration of the tests.

Findings

See attached raw data plotted as recorded of sound pressure dBA against windspeed M/S for all six tests, linear regression lines are superimposed for each set of data. The wind speed ranged from 2-19M/S. As can be seen from the plots there is no difference between the results for the wind turbine running and background noise. Here below are the averages of all the data measurements for information.

	Turbine Running	Background
Average dB	58.07	57.76
Average Windspeed M/S	7.86	7.79

For reference:

60dB is typical conversational speech and 84dB is average street traffic.

Conclusions

As such we conclude that since there is less than a 3dB difference between the background noise and that when the turbine is running the sound level from the turbine is lower than the background noise.

The data also illustrates that at this particular site the background noise level is not a function of wind speed since the noise level is the same at 2m/s as at is at 19m/s. This tells us that any tests conducted at this site will give similar results irrespective of wind conditions.

Noise level measurements of Marlec FM910-4 wind turbine

