



**Convergence
Instruments**

NSRT_mk4 series

Windscreen Comparison

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1 Trade-off

The choice of a windscreen for use with a sound level meter is a tradeoff. On one hand a windscreen slightly affects the frequency response of the instrument. Typically, a larger windscreen will create more attenuation at high frequencies than a smaller one. On the other hand, wind turbulence creates low-frequency noise, and a larger windscreen will reduce that noise more effectively. So, in high-wind situations, a large windscreen is required to lower the wind-induced noise, and minimize the impact of wind on the acoustic measurements.

Two sets of parameters therefore characterize a windscreen:

- **Attenuation as a function of frequency:** Characterizes the impact of the presence of the windscreen on the spectral sensitivity of the instrument. This is generally better for small windscreens than for larger ones.
- **Wind Noise as a function of wind speed:** Characterizes the wind-induced noise as a function of wind speed. This is generally better for larger windscreens than for smaller ones.

Ultimately the user must choose a windscreen, depending on the expected wind conditions and expected acoustic levels.

Convergence Instruments offers two types of windscreens:

- **Standard windscreen:** This is a small (30mm diameter) windscreen that is sold with the instrument.
- **Large windscreen:** This is a larger (76mm diameter) weatherproof windscreen that is sold separately as an accessory.

2 Wind noise vs wind speed

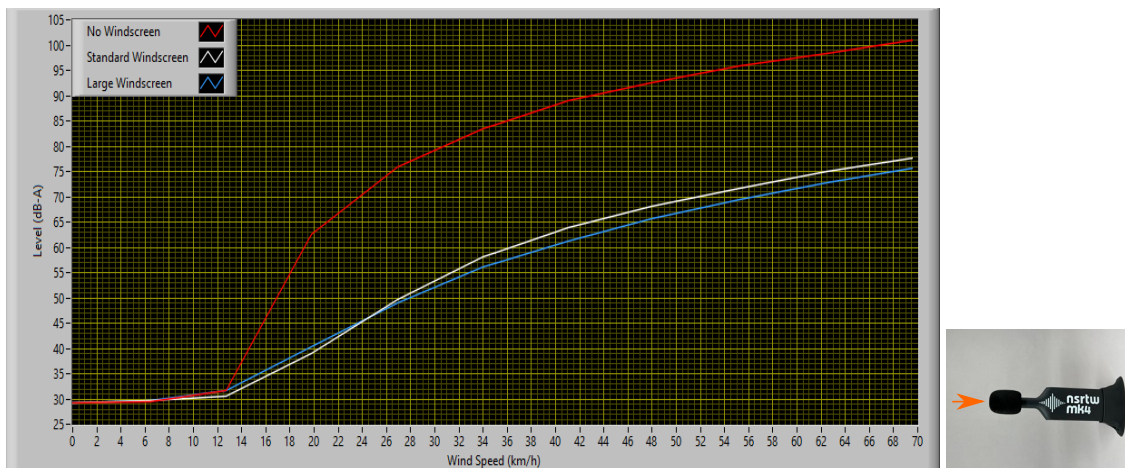


Figure 1 Wind-induced noise: X-axis

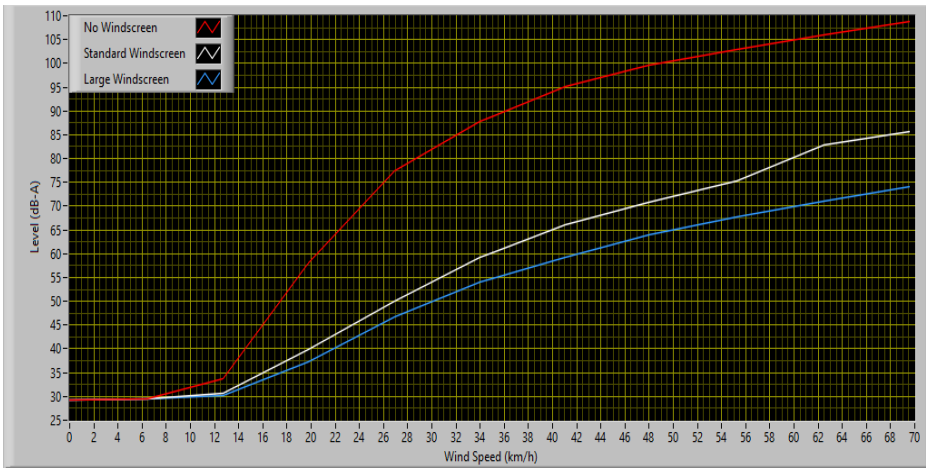


Figure 2 Wind-induced noise: Y-axis

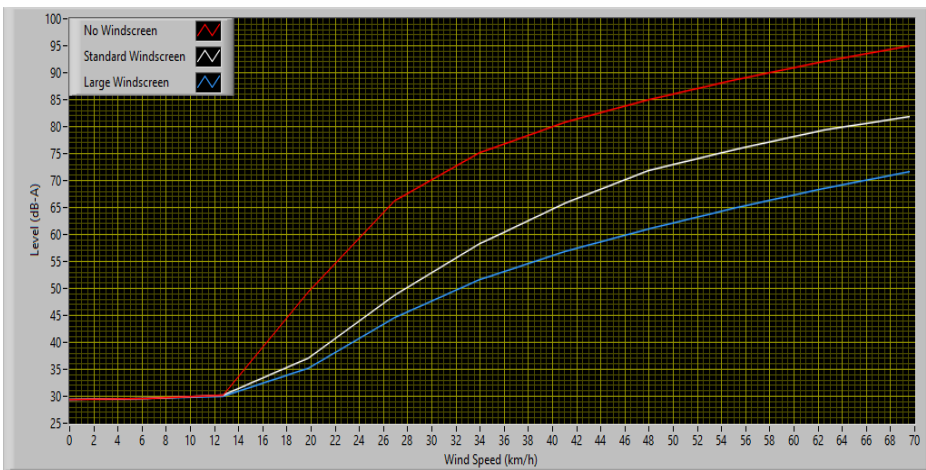


Figure 3 Wind-induced noise: Z-axis

3 Frequency Response

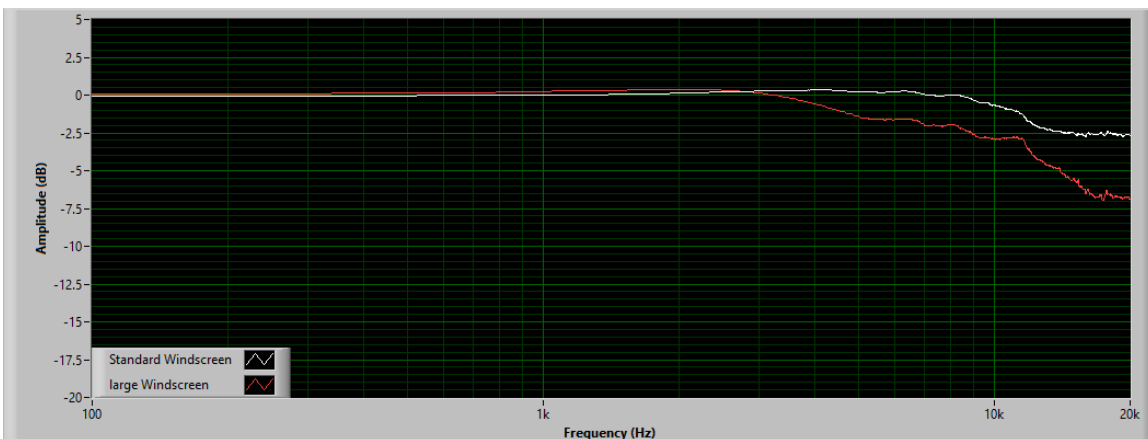


Figure 4 Windscreen Frequency Response

4 Credits

The measurements in this report were taken in the anechoic wind tunnel of the CRASH group at Université de Sherbrooke.

Our thanks to the whole team!

