

## Tool Lending Library Support For Indoor Air Quality projects

Below are some considerations when borrowing tools from the Tool Lending Library for indoor air quality (IAQ) projects.

### Carbon Monoxide (CO)

While our combustion analyzers measure carbon monoxide accurately to  $\pm 1$ ppm, they are not designed for IAQ measurements. These instruments are not loggers and do not log levels over time.

The Lascar / Omega EL-USB-CO300 Carbon Monoxide (CO) logger is intended primarily as a threshold monitoring logger with a typical  $\pm 5$ ppm/4% accuracy. That's sufficient for health and safety minimums such as commercial parking garage exhaust fans or detecting significant CO intrusion from an adjacent garage or household combustion appliances. But these loggers may not provide the resolution that is needed for typical IAQ studies. Specifications are found here: [www.omega.com/das/pdf/OM-EL-USB-CO.pdf](http://www.omega.com/das/pdf/OM-EL-USB-CO.pdf)

### Carbon Dioxide (CO<sub>2</sub>)

Our Hobo MX1102 CO<sub>2</sub> loggers have  $\pm 50$ ppm plus  $\pm 5\%$  of reading resolution which is typical for CO<sub>2</sub> sensor technology. Assuming 400ppm outside air CO<sub>2</sub> levels, our meters can report anywhere between 350ppm and 450ppm and still be within their specification range. Be sure to take this wide bandwidth into consideration when evaluating the data. Specifications can be found here: [www.onsetcomp.com/products/data-loggers/mx1102](http://www.onsetcomp.com/products/data-loggers/mx1102)

### Volatile Organic Compounds (VOCs)

Our ECO-sensors C-21 VOC sensor requires a logger and wiring during the installation process. More information can be found here: [www.ecosensors.com/wp-content/uploads/2012/09/C21.pdf](http://www.ecosensors.com/wp-content/uploads/2012/09/C21.pdf)

Additionally, the output is scaled logarithmically and must be analyzed in a spreadsheet application to obtain useful PPM values. Because the logger is a threshold detector and not an analyzer, it does not report which of the many VOCs commonly found is actually present, so the user must also know what VOCs are present that are being detected in order to assess the impact of any VOC levels to IAQ. More information about how to interpret the ECO-Sensor results can be found at the manufacturers website at these two links:

<http://www.ecosensors.com/wp-content/uploads/old/VO-100.pdf>

<http://www.ecosensors.com/wp-content/uploads/old/VO-101.pdf>

