

Ensuring Healthy Indoor Air Quality (IAQ) – The New Standard

A New Normal

COVID-19 has become an unfortunate part of all our lives. Finding ways to combat its spread, and that of similar viruses, has become a top priority worldwide. As we roll into the winter months when the common cold and flu also become rampant, it becomes imperative for building owners and operators to have the ability to implement the recommendations of the ASHRAE Epidemic Task Force ([ashrae.org](https://www.ashrae.org)) and to demonstrate compliance with all regulatory and statutory requirements such as ASHRAE 62.1, etc.

Can I Operate My Building in a Way That Reduces Risk?

Yes, you can! But you will likely need to make a few changes. ASHRAE has identified several, core, interrelated, functionalities that are needed to operate buildings in a way that reduces occupant exposure to infectious aerosols. Effective air-cleaning, air distribution, system commissioning, ventilation rates, humidity levels, and building pressurization.

Under-supplying outside air by 62% could have direct impact on the health of building occupants.

Four of these six functions require effective, accurate control to accomplish; a level of control that is not possible without accurate measurement of multiple airflow streams, etc.

The guidance provided by ASHRAE encourages building operators to increase outdoor air ventilation, while at the same time maintaining humidity levels within a limited range. These recommendations include:

- Increased-ventilation control
- Pressure control
- Purge control
- Humidity control strategies

Precision measurement of outside airflow rates is required to implement these recommendations in a way that does not compromise the core functions of the air conditioning systems.



The Air Monitor OAM II is the only [AMCA certified system](#) that is designed to measure outside air using the fixed orifice method with $\pm 5\%$ of reading accuracy and flow rates as low as 150 FPM.

Measurement, With Certainty

The most effective way to ensure delivery of the required amount of outside air is by measuring it directly. Inferring outside airflow rates based on the difference between measured supply and return airflow rates can lead to significant error. Consider the effect this has in a typical example with 20,000 CFM Supply Air, 17,000 CFM Return Air, and 3,000 CFM Outside Air. Assuming an overall +/-5% uncertainty for each measurement point...

- 20,000 CFM Supply x 5% = 1,000 CFM
- 17,000 CFM Return x 5% = 850 CFM

...this is a maximum uncertainty of 1,850 CFM associated with 3,000 CFM of Outside Air (+/-62%)! Under-supplying outside air by 62% could have direct impact on the health of building occupants.

Fixed Orifice Method For “Real World” Accuracy

Principal of Taylor Engineering, Steve Taylor, recognizes the difficulties in measuring outside air in the “real world” due to low velocities, asymmetric velocity profiles, dirt, and moisture. His [recommendation](#) for outside air measurement is to use the differential pressure across a “fixed orifice method”.

The Air Monitor OAM II is the only AMCA certified system that is designed to measure outside air using the “fixed orifice method” with 5% of reading accuracy.

Peace Of Mind

According to the [COVID-19 Pulse Study published by Johnson Controls](#), more than 70% of organizations plan to increase outdoor air ventilation to help ensure healthy IAQ. Taking proper measures will give building owners piece of mind that they have mitigated the risks to the health and safety of occupants while maintaining comfort and building integrity.

Air Monitor Corporation offers a full line of airflow measurement technologies to directly measure outside air as well as supply, return, and exhaust airflow rates. Visit airmonitor.com/hvac or contact your local representative to find the product that fits your healthy IAQ needs.

