

# Air Cleaning Technologies Testing Overview



**Let's clear the air.** The market is filled with indoor air cleaning technologies. Some are familiar and trusted. Others are new and relatively unknown. Most are effective to varying degrees—*when used for a specific purpose.* As an industry, we can't make real progress toward healthier and safer buildings if we don't share a common framework of knowledge. Trane® initiated a rigorous scientific study so we can use data to validate and compare solutions, get better insights and establish IAQ best practices. It's part of our Wellsphere™ philosophy of putting people first.

## Independent testing and methodology

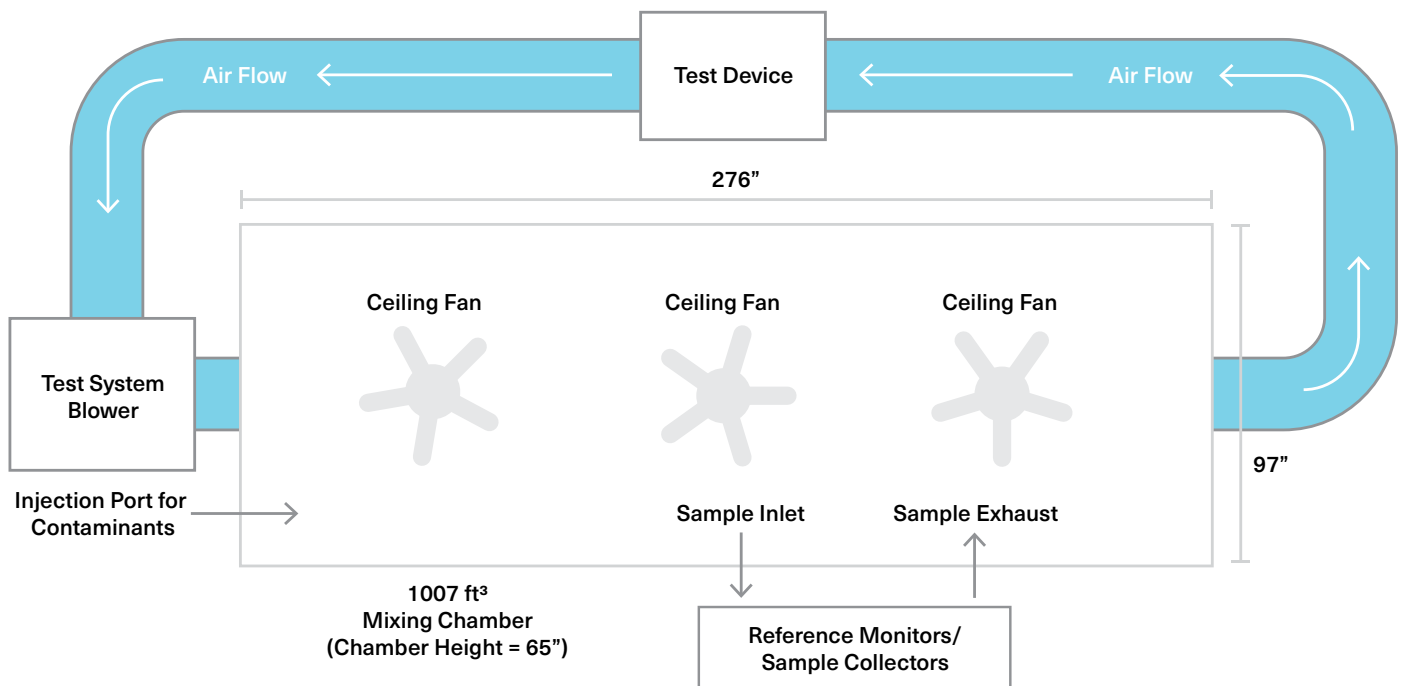
Testing was conducted by LMS Technologies, Inc, an independent, 3rd party air media and filter testing company serving multiple industries including aerospace, medical, automotive—and HVAC.

Technologies tested include: UL 867 Bipolar Ionization (BPI), Dry Hydrogen Peroxide (DHP), Photocatalytic Oxidation, Ultraviolet Germicidal Irradiation (UVGI), and MERV filtration.

Comparative evaluation of IAQ technologies was performed for two applications: in-duct (within the HVAC system) and in-room (stand alone solution within the space).

Testing was conducted on multiple technologies to determine their efficacy for removal of certain Viruses, Bacteria, VOCs and Particles (small (15-650 nm) and very small (< 100 nm)). We also monitored byproduct generation (ozone, ions, etc.).

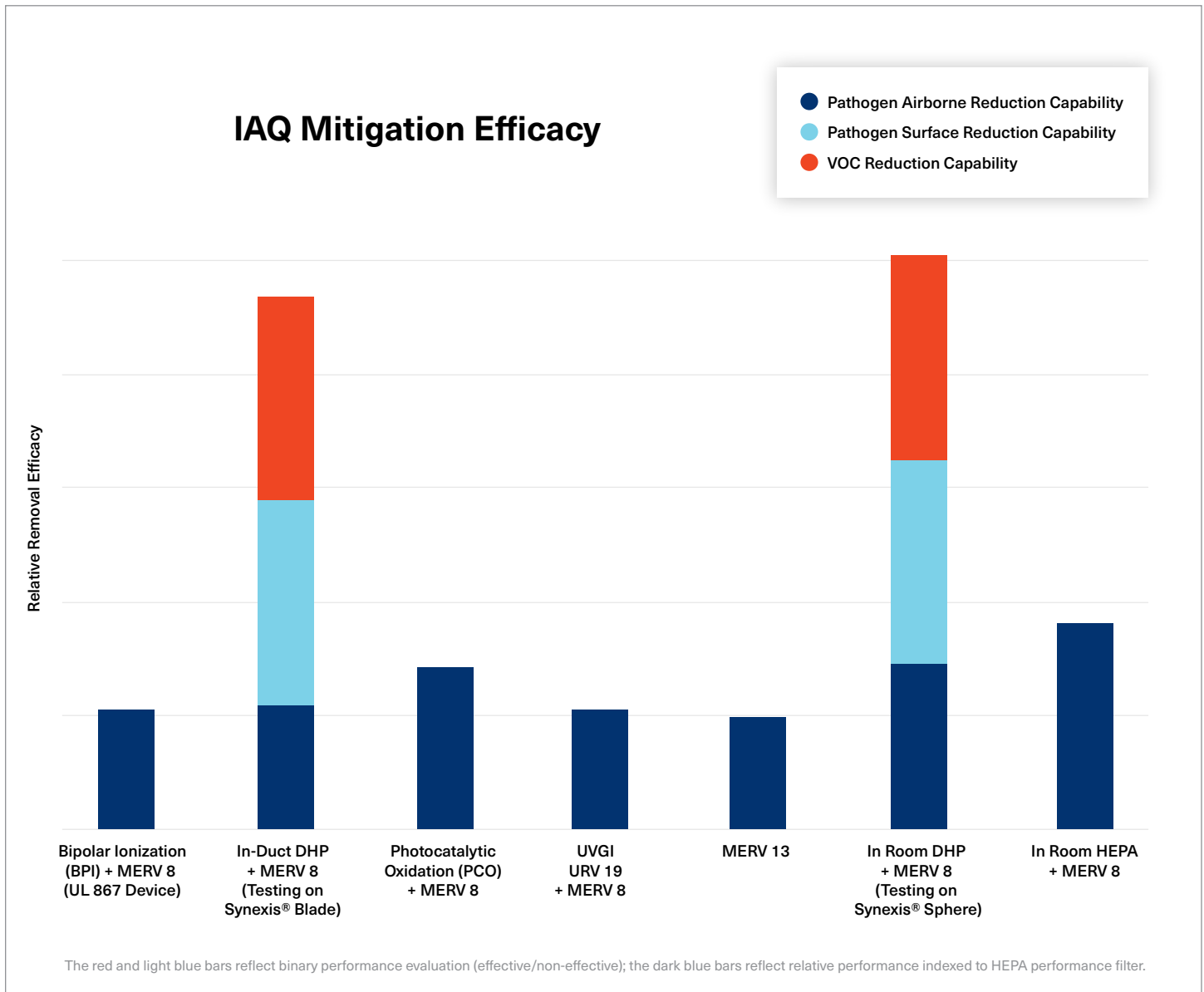
In all cases, testing was conducted in a 1007 ft<sup>3</sup> mixing chamber, as depicted below:



For additional testing details, visit [Trane.com/wellsphere](https://Trane.com/wellsphere).

# Comparative Evaluation Testing Results

Independent lab testing conducted by LMS Technologies, Inc. according to their design and testing methodology yielded the following results.\*



\* Trane tested a limited set of air cleaning technologies. Common standards for efficacy testing do not exist today; therefore, we cannot speculate about the results of non-standard testing conducted by other suppliers.

Each of the tested technologies provides specific benefits. Selecting the most appropriate one for any application requires careful consideration, weighing a number of factors. These findings empower data-driven discussions. Any effective IAQ strategy must begin with a proper IAQ assessment to understand the building's current needs and conditions.

[Learn more at Trane.com](https://www.trane.com)



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