

CORONAVIRUS

We've all seen the warnings from the Centers for Disease Control (CDC) and the White House urging Americans to prepare for a coronavirus outbreak in the United States. Here in Texas it's not uncommon to see people stocking up on water and bread ahead of a storm, so we're used to prepping for potential calamity — but can your HVAC's air filter kill coronavirus, too? In this post, we'll talk about the coronavirus outbreak, how air purifiers can help minimize the spread of infectious diseases, and whether your home HVAC system can guard against this pandemic. We'll also share tips on how to improve indoor air quality, which is important year-round, especially during cold and flu season.

What is Coronavirus?

Recently, we've seen people referring to coronavirus as a "cold" or "the flu" to assuage some of the panic surrounding this outbreak. The reality is that, in some ways, this is almost true. According to WebMD, most of us have had one of the common coronaviruses, such as the kinds that cause sinus and throat infections, at least once in our lifetime. The current outbreak stems from a novel coronavirus, which has been named COVID-19. While this one was discovered in December 2019, we have seen more serious forms of coronavirus in the past such as Middle East Respiratory Syndrome (MERS) and severe acute respiratory syndrome (SARS).

Scientists around the world are working together to determine treatment options and outcomes for COVID-19, but it's still very early. We probably won't know much for a while, but in the meantime, the CDC recommends washing your hands frequently, avoiding sick people, and staying home when you're not feeling well.



RE: Coronavirus: Fresh-Aire UV efficiency against viruses, bacteria & mold

Fresh-Aire UV has been receiving inquiries regarding the effectiveness of UV disinfection systems against coronavirus. We believe the best approach is to be as transparent as possible and to explain the fundamentals and variables that play a factor in inactivating coronavirus and other pathogens with UVC germicidal technologies.

Fresh-Aire UV systems are tested and validated against bacteria, viruses, mold & fungus. Fresh-Aire UV systems have been tested and achieve up to a 99.999996% reduction on microorganisms. There are a number of factors that need to be addressed in order to determine efficiency, these include but not limited to, the application, such as surface or air disinfection, air velocity and temperature, recirculation rates, and dwell time, as well as the specific biological target. Fresh-Aire UV systems are installed in the



HVAC unit and/or ductwork and are designed to disinfect the air as it circulates through the ventilation system. UV dosage for log reduction is measured in several ways including microwatts per second/centimetres² ($\mu\text{Ws}/\text{cm}^2$). Every microorganism, including coronavirus, requires a specific UVC dosage for inactivation. UV disinfection has been employed for decades in water treatment; these microwatt values have been used for reference to gauge UVC efficiency against a large cross-section of microorganisms. While FreshAire UV systems have not been specifically tested against coronavirus, they have been tested and proven effective against similar pathogens, some that require an even greater dosage for inactivation than coronavirus.

UV disinfection systems for HVAC are an ideal proactive measure to complement filtration. Microorganisms, particularly viruses, are so small that filters are mostly ineffective. The UV systems have also been shown to reduce problematic molds and pathogens that are found within the HVAC system and drain pan that would otherwise be introduced and distributed throughout the envelope of the building.