



LifeAire Systems Kill Technology Overview

The LifeAire system is a patented, revolutionary in-duct air purification system that provides ultra-pure air in critical spaces by removing up to 100% of all airborne bacterial, fungal and viral pathogens in a single pass. It performs a continuous and dynamic kill of all airborne pathogens, 24/7, without losing the operational use of the protected space. The solution features air purification technology that aggressively remediates infectious biological pathogens from both the outside and recirculated air within the protected space. The LifeAire System was genomically and mathematically modeled to kill the anthrax spore, the most difficult spore to kill. The kill mechanism used in the LifeAire System perturbs and destroys the DNA and RNA of airborne pathogens and has been tested by the National Homeland Security Research Center and proven to provide a 9-log¹ reduction of all infectious airborne bacterial, viral and fungal pathogens on a single pass. As reference, sterility is defined by a 6-log² reduction. The kill ability provided by the technology is purposed and takes into account the specific air velocity and volume, resonance and dwell time, reflectivity and building materials to deliver complete remediation of all airborne pathogens on a single pass. The LifeAire technology employs a kill technology rather than the standard capture model used by HEPA filtration, which cannot comprehensively remediate pathogens sizes in the range of 0.1 to 0.3 microns. No byproducts, ozone or intermediate molecules are generated.

LifeAire Systems: Viral Kill

Virus	Viral Micron Size	LifeAire Systems Single Pass Viral Kill Effectiveness
Parvovirus H-1	0.022	100%
Echovirus	0.024	100%
Coxsackievirus	0.027	100%
Norovirus	0.029	100%
Reovirus	0.075	100%
Adenovirus	0.079	100%
Influenza A virus	0.098	100%
Avian Influenza virus	0.098	100%
SARS	0.113	100%
Coronavirus	0.120	100%
Variola virus	0.254	100%
Measles virus	0.329	100%

Note: In contrast, HEPA filtration is less effective in comprehensively filtering viruses in the range of 0.1 – 0.3 microns

¹ 9-log kill equals 1 x 10⁹ remediation efficiency

² 6-log kill equals 1 x 10⁶ remediation efficiency



LifeAire Systems: 9-log Reduction of Airborne Biological Pathogens

Biological Pathogen	LifeAire Systems Single Pass Kill Rate/Effectiveness
Anthrax	99.99%
MRSA	100%
Clostridium difficile spore	100%
Pseudomonas aeruginosa	100%
Legionella pneumophila	100%
Aspergillus	100%
Tuberculosis	100%
Staphylococcus pneumonia	100%
Streptococcus pneumonia	100%
Mycobacterium tuberculosis	100%

HEPA Filtration vs. LifeAire Systems Purification

Airborne Pathogen	HEPA-Filtered Environment	LifeAire Systems-Purified Environment
Biological	1,778 cfu/m ³	<1 cfu/m ³