



HALO AIR FILTRATION PREVENTATIVE RESPONSE OF AEROSOLIZED TRANSMISSION



Executive Summary

Erlab, Inc is the manufacturer of the Halo HEPA air purifier. We can assist facilities in protecting their customers, employees, and visitors. We offer you a long-term solution by providing a complete air treatment system with proven effectiveness at mitigating the risk of viral transmission and reducing viral load concentrations and other harmful pollutants. With 90% of our time spent indoors, addressing Indoor Air Quality (IAQ) is crucial to our overall health and well-being. At Erlab, Inc., we develop plans that address your challenges with solutions to achieve results.



SAFE, BREATHABLE AIR

About Erlab

For over 50 years, Erlab's passion has focused on the research & development, design, and manufacturing of cutting-edge air filtration systems. As an innovator, Erlab is committed to safety, performance, energy efficiency, and sustainability and has remained number one globally for air filtration since 1968.

Aerosolized Virus Transmission

There are many ways a virus is transmitted, but airborne aerosolized droplets are the primary form of spread. When these micro-sized droplets are released, they remain suspended in the air for several hours (or longer). Even worse, they are recirculated through a building's ventilation via the return and supply vents.

Unfortunately, these tiny droplets wreak havoc on our bodies—particularly our respiratory systems—as they are inhaled deep into our lungs. Our bodies cannot filter these tiny particles out, leading to lower respiratory tract infections and increasing the severity of the disease. However, because these droplets are so small, there must be a high “viral load,” or concentration, of droplets for transmission to occur. This will affect every individual differently, meaning we can never truly know what a safe environment is. Therefore, the best course of action is to put proper air treatment solutions in place to ensure cleaner, safer air for everyone.

Mitigating Risk - Improving the Indoor Air Quality (IAQ) in Your Commercial Space

The American Society of Refrigeration and Air-Conditioning's (ASHRAE) positioning document on infectious aerosols states that the design and operation of HVAC systems can influence infectious aerosol transport. Still, they are only one part of infection control. Their positioning document on Indoor Air Quality (IAQ) and the CDC's recommendation for ventilation in buildings outline the criteria facilities should follow to improve IAQ and decrease the risk of viral transmission.

1. Increase air change rates (ACH) and minimum outdoor airflow rates.
2. Ensure proper air distribution or dirty-to-clean directional airflow patterns.
3. Increase air filtration within the ventilation without reducing design airflow or decreasing the air change rates.
4. Add HEPA-filtered systems to enhance air cleaning.



Independent HEPA Filtration System: Halo HEPA

The ceiling-mounted Halo filtration system was originally designed to protect laboratory personnel from laboratory pollution exposure. The design was based on a delicate equation of the right airflow, carbon bed depth, and air distribution.

Developing the HALO with this unique approach was made possible through over 50 years of experience in providing air filtering solutions to laboratories across the globe. Our flexible and adaptable designs allow us to integrate HEPA H14 filters into the Halo, providing us with the ability to adapt to the necessary demands of HEPA-filtered air purifiers, even outside of the laboratory. Because of the strict standards within laboratories, the Halo was designed with more than just filtration in mind. It also considers the impact the Halo would have on the facility's ventilation effectiveness (VEFF) and increases in air change rate (ACH). The Halo's proven efficiency in a lab setting is transferable to the commercial world and has provided us the ability to ensure we meet all necessary criteria, such as:

1. Airflow pattern distribution
2. Increased ACH
3. Optimal H14 HEPA filtration
4. Effectiveness at reducing particulate load concentrations

Each Halo will provide one (1) additional ACH per every 10,000 Cu' of volume. The placement of the Halo is critical to achieving such phenomenal results. Its position on the ceiling creates a vertical airflow pattern that drives polluted air up and away from the breathing zone and returns clean air back into the very same room horizontally across the ceiling, creating what is known as the Coanda effect.

Data derived from several different third-party tests prove Halo's performance against aerosolized viruses. Tests were conducted in controlled and real-world dynamic conditions to understand the efficacy of Halo's performance truly. The consistency of results has been staggering, with an average particulate load reduction of >80% for the most harmful particles between 5micron – 0.3 microns in size. The reduction of particles directly impacts the effectiveness of reducing the chances of airborne viral transmission. The reduced exposure to viral concentration loads is the successful equation for proper mitigation. Below are results from both third-party controlled testing and real-world peered reviewed data on the HALO performance:



Real-world installation validation test data:
[https://usa.erlab.com/hubfs/Jesse%20Files/Summarized%20WSS OTV Moes FINAL.pdf](https://usa.erlab.com/hubfs/Jesse%20Files/Summarized%20WSS%20OTV%20Moes%20FINAL.pdf)

NEXT Charter School Case Story:
[https://usa.erlab.com/hubfs/Gail/Case%20Stories/NextChrtrSchl CaseStory Oct 20 21.pdf](https://usa.erlab.com/hubfs/Gail/Case%20Stories/NextChrtrSchl%20CaseStory%20Oct%2021.pdf)

The Ark Learning Center:
[https://6548208.fs1.hubspotusercontent-na1.net/hubfs/6548208/2022%20Case%20Studies/TheArkLearningCenter Case Story.pdf](https://6548208.fs1.hubspotusercontent-na1.net/hubfs/6548208/2022%20Case%20Studies/TheArkLearningCenter%20Case%20Story.pdf)

Christ the King Testimonial:
<https://vimeo.com/manage/videos/639190528>

Off the Vine Case Story:
[https://usa.erlab.com/hubfs/Gail/Case%20Stories/OffTheVine CaseStory 9 21.pdf](https://usa.erlab.com/hubfs/Gail/Case%20Stories/OffTheVine%20CaseStory%209%2021.pdf)

Community Chapel Case Story:
<https://usa.erlab.com/hubfs/Jesse%20Files/Community%20Chapel%20Youth%20Center%20Case%20Story.pdf>

Avamere Healthcare Covid 19 results:
<https://usa.erlab.com/hubfs/Jesse%20Files/Assessment%20of%20ER%20Lab%20Halo%20HEPA%20Filtration%20Unit%20IHR%2006600%20-%20Cooper-1.pdf>

ARE labs – controlled testing with MS2 Bacteriophage:
<https://usa.erlab.com/hubfs/Jesse%20Files/MS2%20Viable%20Testing%20of%20Halo%20P%20Testing%20ARE%20Labs.pdf>

Avamere Case Story:
<https://usa.erlab.com/hubfs/Jesse%20Files/MS2%20Viable%20Testing%20of%20Halo%20P%20Testing%20ARE%20Labs.pdf>

Moe's Case Story:
https://usa.erlab.com/hubfs/Jesse%20Files/Moes%20Southwest%20Grill%20CaseStory_SmlrFile.pdf

VEFF and particle load testing from 3 Flow systems:
<https://usa.erlab.com/hubfs/Jesse%20Files/A%20COVID19%20Primer%20on%20Ventilation%20and%20Air%20Exchange%20Rates-1.pdf>



With other virus mitigation options, there are serious risks to consider. Simply put, a lot of snake oil is available on the market. Everywhere you look, someone seems to have the best possible solution. They promise 99.99% decontamination or effectiveness. In reality, many unethical companies are taking advantage of the current anxiety-ridden air purification market. The Halo data is unmatched, third-party certified, and not full of “fluff” data. Expectations are set according to the product’s actual performance in a real-world setting. There is simply no false data or misleading performance criteria. The Halo will perform as advertised and mitigate the risk of airborne spread while improving your IAQ.

HALO is a long-term solution; the Halo is a permanent infrastructure improvement without the infrastructure development costs or complexities. A solution for today’s challenges and tomorrow’s well-being.

X *Jesse Coiro*

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