

NAILOR POSITION ON COVID-19 & AIR CLEANING



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ABOUT THE AUTHOR: GUS FARIS

- 50+ Years of Experience
- Active Leadership Roles in ASHRAE (Life member) and AHRI
- Published Papers and Product Guides
- Vice-President, Engineering - Nailor Industries
- Developed the first Fan Powered VAV boxes and later introduced ECM motor technology to the industry.



SUMMARY

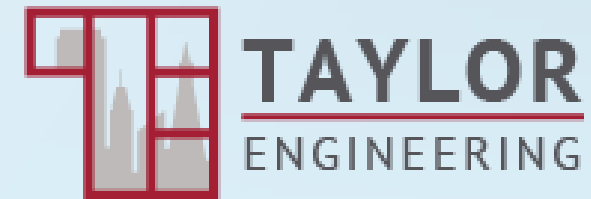
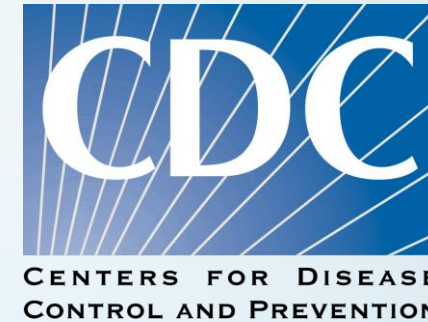
- **Our opinion is that four of the best sources are:**

- The Center for Disease Control (CDC),
- The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
- World Health Organization (WHO)
- Taylor Engineering's White Paper.

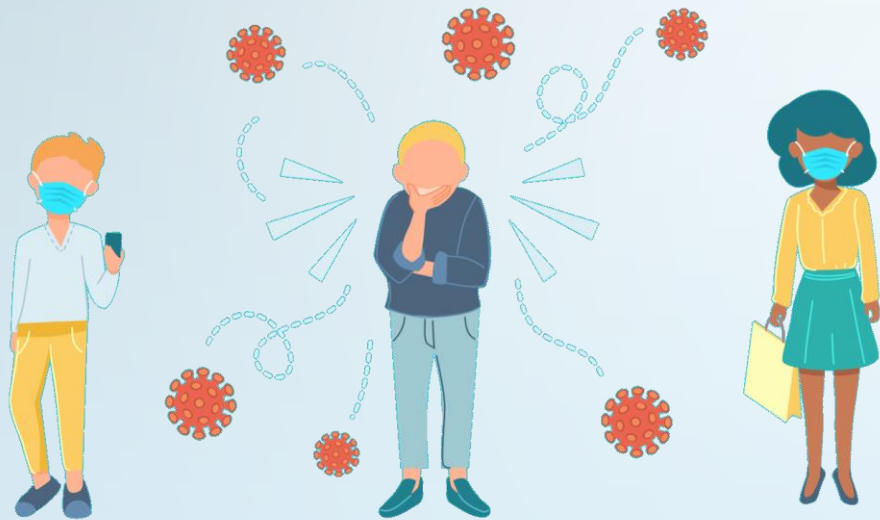
- The opinions in this paper are our best assumptions as garnered from those and other sources about the virus.

- **We will cover:**

- Where the virus comes from
- Where the virus is located in an infected room
- What is the best action to take to best prevent infections within your building



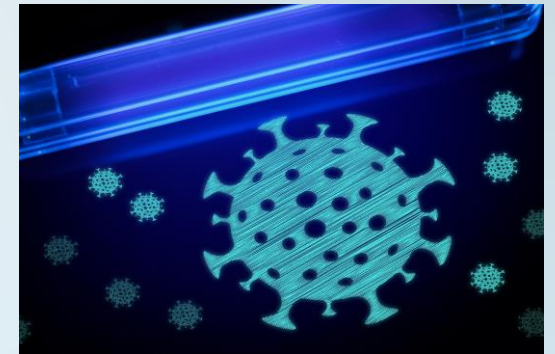
WHERE DOES THE VIRUS COME FROM?



- The virus does not come from outdoors.
- It is introduced inside the building by occupants who are infected.
- Little that can be done to affect the virus by cleaning or sterilizing outdoor air.
- It does not mean that you should not keep your outdoor air as clean as possible.
 - Other things in the air that affect occupants by compromising their immune systems. .
 - Resulting in Covid-19 being more likely to infect or cause greater discomfort to those occupants.

WHERE DOES THE VIRUS COME FROM? ACTIONS TO BE TAKEN:

- Outdoor air should be properly protected with adequate filtration and UVC lights
 - Captures and kills any pollutants and biological contaminants before they can enter the building air supply.
- The filter on equipment bringing in outside air should be the highest MERV rating that is compatible with the air handler
 - Optimally MERV 13 to MERV 16.



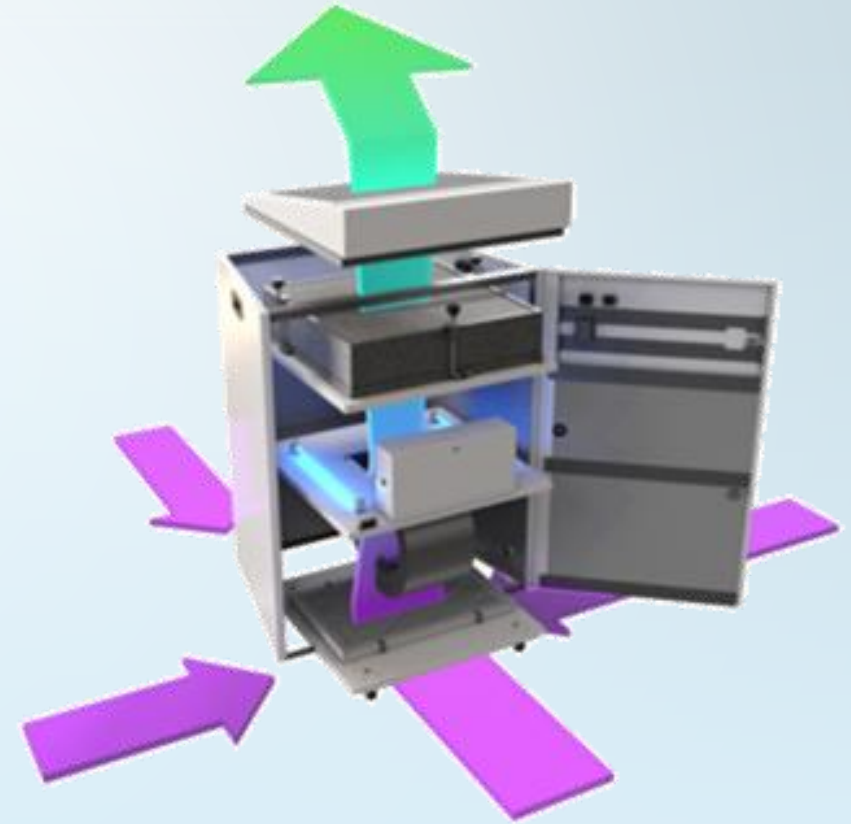
WHERE IS THE VIRUS LOCATED IN AN INFECTED ROOM?



- The virus is expelled from an infected person through the nose or mouth
- Encapsulated in a water droplet.
- **The droplets nearly all tend to fall toward the floor** unless the water evaporates before the virus hits the floor.
 - In that case, the virus can become aerosolized and remain airborne.
- There are a few instances where virus RNA has been found in filters and on dampers in the air conditioning system
- Rarely an aerosol floating freely in the air
 - unless a fan or strong jet is present in the occupied space.
- Unlikely activated Covid-19 viruses are able to make it into the air conditioning system

WHERE IS THE VIRUS LOCATED IN AN INFECTED ROOM? ACTIONS TO BE TAKEN

- Cleaning room air is a common recommendation as a reasonable approach.
- Nailor has designed the MAC-700 for that purpose.
 - Bottom intake to pick up contaminants from the floor.
 - Internal UVc kill zone destroys 99.9% of viruses present.
 - HEPA filter captures 99.99% of all other contaminants as they pass through the filter.
 - Pre-filter at the bottom of the unit extends the HEPA filter lifetime by removing larger particles.



WHAT IS THE BEST ACTION TO TAKE TO PREVENT INFECTIONS WITHIN YOUR BUILDING?

- **Indoor recirculating air handlers feed many zones distributing air throughout large areas of the building.**
 - That air should be well filtered.
- **Use the highest MERV rated filters recommended by the manufacturer on your air distribution devices.**
- **Employ room air cleaners for local occupied spaces like Nailor's MAC 700.**
 - Indoor recirculating air handlers should also be equipped with at least MERV 10 filters.
- **Avoid devices which direct air jets directly at occupants in the occupied zone.**
 - Air jets carry viruses from an infected person to others in near proximity.



CONTACT THE EXPERTS

- Learn more about Nailor Industries, Inc. MAC-700 Mobile Air Cleaner at <http://www.technicalair.com/nailormac700>
- Contact the Technical Air Systems' Sales Engineering Team at **973-285-0333** or by email at solutions@technicalair.com

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