

# Indoor Air Quality Optimization Solutions

Improve air cleaning capabilities



Enable a safer and cleaner environment in closed spaces whilst enforcing hygiene in all types of buildings and facilities

Preventing the spread of viruses has become a major concern for cities, communities and companies. Whilst health authorities recommend applying physical distancing and using masks against droplet transmission, airborne transmission has to be handled differently. Airborne transmission can be caused by the presence of microbes within droplet nuclei, which are generally considered to be particles  $<5\ \mu\text{m}$  in diameter that can remain in the air for a long period of time and can be transmitted to others over distances greater than one meter. An air conditioning system can pick up those aerosoles, process them and deposit them in a different area of the building away from people.

To minimize airborne transmission, our innovative portfolio of solutions includes technologies to monitor and improve indoor air quality in compliance with the guidance set by expert organizations such as ASHRAE, Eurovent or REHVA, in the Covid-19 context.

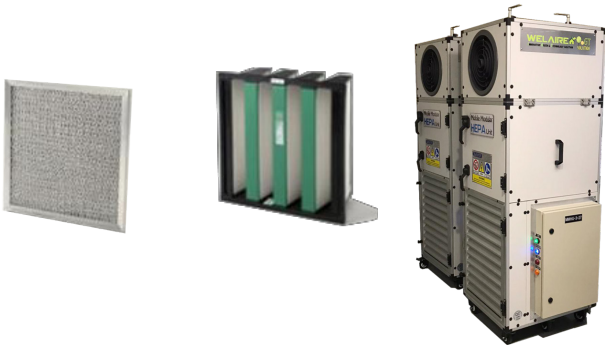
## INCLUDING:

- Improving central air filtration levels (higher or special filtration classification)
- Considering portable air room cleaner with HEPA filtration
- Considering ultraviolet germicidal irradiation, especially where other measures are not possible

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## Filter

The physical removal of particulates from air is the first step in improving indoor air quality. Johnson Controls can provide and replace any filter of the latest global standard, ISO16890, which can be effective for trapping particles depending on the particle size and filter class, including HEPA filters from class E10 up to H14 according to EN 1822:2010, chemical filters like active carbon filters, and activated alumina and safe removal (bag-in-bag-out) filters.



## Mobile Modular HEPA Fan Unit

Our mobile modular HEPA fan unit with an airflow of up to 3240 m<sup>3</sup>/h is equipped with a H13 or above HEPA filter and can capture particles with a size of  $\geq 0.03 \mu\text{m}$ . It converts general wards into negative pressure isolation rooms or functions as a recirculating HEPA air cleaner in rooms and areas like offices, stores and waiting rooms. Optionally the mobile unit can be equipped with ionizers and a UV disinfection system.

Please contact your Johnson Controls representative for information on the Indoor Air Quality Optimization Solutions.

[www.johnsoncontrols.com](http://www.johnsoncontrols.com)



UV-C lights deactivate airborne infectious microorganisms like viruses and bacteria

## Ultraviolet Germicidal Irradiation

UV energy is electromagnetic radiation with a wavelength shorter than that of visible light, but longer than softer x-rays. UV-C energy disrupts the DNA of a wide range of microorganisms, rendering them harmless. This active line-of-sight technology affects areas directly exposed to the light source. It includes the direct airstream and surfaces. The effectiveness depends on the UVGI dosage, wavelengths, exposure time, and humidity level. Our selection software helps to make the right choice. UV-C can be offered for new AHUs or retrofit in existing HVAC units.

## Indoor air purification by electrical charging of particles

Monopolar Ionization or Electrostatic Precipitation (ESP) works by flooding the air with millions of either negatively or positively charged particles to react with both microbes and contaminants. This method is capable of capturing  $\geq 0.01 \mu\text{m}$  particles by electrically charging them. The collector plates, which are oppositely charged, then capture these particles in the next step. Our Ionization units can be installed independently, embedded in the ceiling or in existing air handling and fan coil units.