February 2020

Be Prepared against Coronavirus COVID-19 with OPTIPURA®, more than an air purifier for viruses.

"Optipura commercial air purifiers utilise advanced technologies and the mobile gaseous plasma principle that are particularly well-suited against viruses and other air or droplet borne infective agents. This innovation works as its sanitizing power takes place both inside the device and throughout an applied space outside of it to create more hygienic environments that lower the risk of infection and transmissions."

INTRODUCTION

The COVID-19 strain of coronavirus was reported to the World Health Organisation (WHO) on 31st December 2019. It has since, at the time of writing, infected tens of thousands globally, has claimed the lives of thousands and has the potential to affect many more people, communities and businesses in ways that are yet to be fully realised.

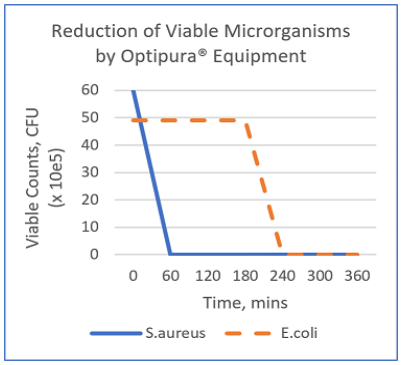
As remote as it may seem, an air purifier could be what you may need during times like these. They are after all used indoors, a destination which the majority of us spend most of our time, and may perceivably do some good for an illness that "may be in the air". If you are specifically looking for an air purifier for viruses for your workplace, you may need to consider more than a standard air purifier.

SIGNIFICANCE OF THE ENVIRONMENT (AIR AND SURFACES) IN TRANSMISSION

Illustration 1: A sneeze releasing a fine aerosol spray of droplets carrying millions of bacteria and viruses that contaminate the air and surfaces.

The current COVID-19 strain, deadly as it may be, thankfully is understood well enough to be known to be spread by droplet infection. This means that healthy individuals primarily get infected by being exposed to virus particles associated with droplets of mucus or saliva discharged from an infected person by a dispersal method such as coughing, sneezing, or mere enthused conversation.

In particular, coughs and sneezes are both high velocity discharges that clock in speeds of about 80 and 160 kilometres per hour and droplet counts of 3,000 and 100,000 respectively[1]. These droplets form an aerosol cloud that may remain in the air for up to minutes depending on the size of droplets and other environmental factors, before eventually settling onto a potentially wide area on surfaces, many of which may be shared with others. With the case of infected persons both the air and surfaces around them then become contaminated and become intermediary components in the infection cycle.



Graph 1: Surface reduction of viable hospital isolates by Optipura equipment (Test Ref No: SN-2004.560)

THE RIGHT WORKINGS TO CURB TRANSMISSIONS

This is where the Optipura fits in. Optipura air purifiers utilise technologies that have long been established as being able to break down a broad spectrum of potential pathogens in the air and on surfaces in spaces where they are installed, rendering them unviable and incapable of infection.

These include germicidal ultraviolet light, accelerated photo-degradation and plasma that by themselves already exert an anti-microbial effect, but work with synergy when simultaneously employed in Optipura equipment (more information at http://www.optipura.com/technology.htm). As described later in this article, this translates to several advantages of utilising Optipura equipment over standard air purifiers.

In application Optipura deactivates viruses in the air and surfaces in the implemented space by the following process (*see illustration 2*):

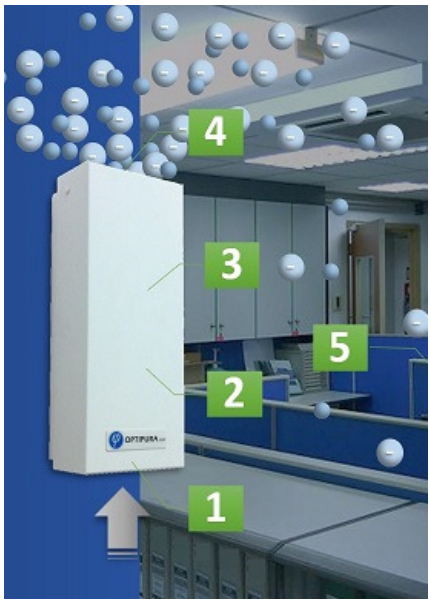


Illustration 2: Optipura's 5-stage air cleaning process illustrated. Model Walla pictured here installed in an office

(1) Contaminated air is drawn into the purifying chamber of the OPTIPURA air purifier and is exposed to high intensity germicidal light rays. This alters the DNA and RNA in microorganisms such as viruses to make them unviable.

(2) Here potential pathogens are also made unviable when they come into contact with surfaces where they are oxidised by the activated APD™ surface technology.

(3) Concurrently, the air in the chamber is energised to a plasma state that further breaks down any organic contaminants in contact with it.

(4) This active, energised plasma, comprising a bipolar, energised mix of ions, is pushed out into the surroundings and continues its antimicrobial action in the air all around a room, degrading virus particles upon contact and stripping them of their viability.

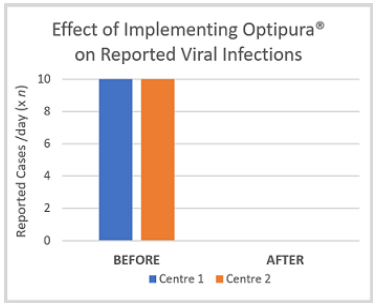
(5) As these plasmas travel to contact all surfaces, edges and sides in the applied environment, it continues its sanitising effect there, working at all angles and directions to lower the number of viable infective particles and consequently the risk of transmission in the applied volume.

The important aspect worth noting is that the air gains a sanitising property after being energised by Optipura; elevated from a mere transport medium of viruses into an active component that actually begins breaking them down upon their exposure to plasma. A somewhat parallel analogy with water would be how chlorine makes swimming pool water inhospitable to potential disease-causing microorganisms introduced by an infected swimmer, thereby denying their survival and infection of other swimmers.

Therefore, when compared against gold-standard filtration air cleaners Optipura's triple technology bears the clear advantage of being able to actually deactivate virus particles, as opposed to capturing virus particles at a filter, as well as being able to effect this deactivation action of virus particles outside and away of the air purification device via an actively mobile plasma.

While this 'active mobile' sanitization phenomenon may at first be hard to perceive, this effect was proven valid by a third-party laboratory when hospital-derived pathogens were killed while they were situated a distance away from an operating Optipura test equipment (*see Graph 1*).

By this principle it was thus not surprising that Optipura has successfully been applied in common places where people gather for extended or critical periods, and with good effect.



Graph 2: Results indicating positive results of implementing Optipura in care centres that experienced transmission of illness due to a specific virus pathogen.

As example in real-world applications, significant drops of new cases of viral infections were reported in facilities where certain levels of care were expected after a program utilising Optipura equipment was implemented (*see Graph 2*).

Aside from the positive outcomes, such deployments highlight how the advantages of Optipura's gaseous sanitisation technology complement and enhance existing mechanical 'wipe-down' cleaning programs; hitting spots that may have been otherwise been missed, and by working even during off-hours, all to help prevent the transmission of viral disease at work places.

READY TO MEET DEMANDS FOR ENHANCED ENVIRONMENTAL HYGIENE

According to a recent news report[2] we may be on the verge of a pandemic with COVID-19. It is a fact that every day we are exposed to a vast variety of viruses and other potential pathogens, particularly indoors where we share the same air and frequently contact surfaces that were not too long ago touched by someone else (see illustration 3).

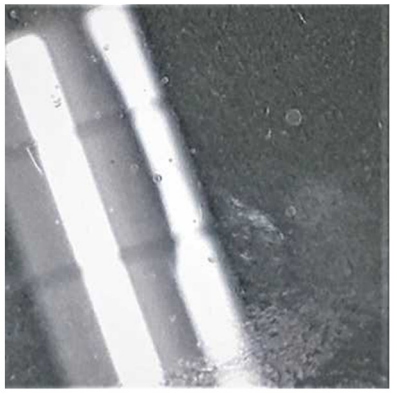


Illustration 3: Smears and droplets left over a meeting table by contact and conversation by attendees. Common contact surfaces such as these may play a key role in viral transmission at the work place.

In our experience the indoor environment is a significant aspect that may determine if an infective agent such as a virus becomes persistent long enough to cause concerns such as circulating illness, or even outbreaks. In such cases Optipura equipment has been used to break these cycles.

Optipura commercial air purifiers utilise advanced technologies and the mobile gaseous plasma principle that are particularly well-suited against viruses and other air or droplet borne infective agents. This innovation works as its sanitizing power takes place both inside the device and throughout an applied space outside of it to create more hygienic environments that lower the risk of infection and transmissions.

Optipura is easy to implement and works well to complement existing air-cleaning equipment and hygiene programs, comfortably integrating unobtrusively as they do in thousands of installations worldwide to deodorise, sanitize and purify indoor environments. If you are looking for an air purifier for viruses, the occasion calls for an Optipura, more than an air purifier.

OUR BEST FOR YOU

You may have several things on your mind when taking measures to prevent or even control the transmission of diseases at your work place. We at Optipura understand these concerns and have a good track record of professionalism and discretion that is trusted by many of the best names in industry.

If you are considering a more comprehensive solution for COVID-19 preparedness visit us at www.optipura.com. Alternatively email us and one of our trained professionals will be in touch to help you determine which Optipura would work best for you.

Email: info@optipura.com
Website: www.optipura.com

REFERENCES

[1] American Lung Association - https://www.lung.org/about-us/blog/2016/05/sneeze-versus-cough.html
[2] Dr. Anthony Fauci, immunologist and director of the US National Institute of Allergy and Infectious Diseases, CNN, Feb 22