
Nanowave Technology First to Inactivate Virus Continuously in Fast Moving Air

2020-11-16

Dynamics Inc., a global leader in edge-to-edge flexible electronics and high-intensity UV technology, announced a major breakthrough in the fight against SARS-CoV-2, the virus that causes COVID-19.

[Dynamics](#) "Nanowave" Technology is the first technology to successfully inactivate aerosolized COVID-19 virus in fast moving air at multiple labs from the NIAID Biodefense Laboratory Network. The technology inactivated the COVID-19 virus at the maximum airflow speeds of the labs while also exceeding the viral detection limits of those tests.

Dynamics is immediately making the technology available for purchase in the [United States](#) through the introduction of Nanowave Air™. The Nanowave Air device can be purchased through its [website](#).

Nanowave Air can inactivate up to 99 percent of the COVID-19 virus at speeds up to 5 liters per second. When air is moving through the device at this speed, the COVID-19 virus is being inactivated in less than two thousandths of a second.

To create the breakthrough inactivation technology, Dynamics had to first understand how to inactivate the virus for different applications and in different environments. Dynamics has performed over 80 experiments against the COVID-19 virus in liquid, on surfaces, and in air. In May 2020, the technology achieved what is believed to be the first documented inactivation of the virus with ultraviolet type C radiation.

"When we started on this journey, people didn't even believe UV-C would inactivate the COVID-19 virus as it had never been done before," stated Jeff Mullen, Dynamics founder and CEO. "We had to perform numerous experiments with top US labs with the COVID-19 virus to find the best operating methodologies to inactivate the virus for different types of applications. And, even after we inactivated the COVID-19 virus, experts didn't believe the

amount and type of UV radiation needed for fast air applications was even plausible. For the past 50 years, ultraviolet has needed minutes or hours to perform any meaningful level of inactivation. Nanowave Air inactivates the COVID-19 virus in less than two thousandths of a second."

To achieve the amount and type of UV-C radiation needed to inactivate the COVID-19 virus at these speeds, Dynamics heavily leveraged its 10+ years of expertise in designing and manufacturing state-of-the-art flexible microelectronics. Each Nanowave Air device has the world's first fully flexible UV-C "lamp" that is physically contorted in the device to provide ultra-high intensity UV-C radiation.

"Dynamics has created one of the first viable tools for inactivating the COVID-19 virus," stated Elias Towe, a Professor of Materials Science and Engineering at Carnegie Mellon University. "The performance of the device, as measured at major US laboratories, is impressive. What is remarkable is that Dynamics modified some of their unique know-how in flexible microelectronic techniques and merged these with emerging UV-C light technologies to produce intensities sufficient to inactivate the virus."

Nanowave Air includes four high-performance motors that pulls air into the device at up to 300 liters per minute for instant virus inactivation. The motors are so powerful that inactivated air can be pushed over 10 feet away from the device, a capability necessary to achieve a variety of high-performance air applications.

Air may be inactivated in a room at different speeds based on the number of devices deployed. A single device, for example, can process the amount of air in a standard 800 ft³ room in roughly 75 minutes. This may be particularly useful for certain reception areas, office spaces, retail spaces, bathrooms, elevators, meeting rooms, and even vehicles. For large spaces, or faster processing times, additional units may need to be deployed.

Nanowave Air may also provide inactivated air continuously to a person. For example, a device may be pointed directly at a person in order to provide them with a constant stream of inactivated air. This may be particularly useful in certain dental offices, doctor offices, aesthetic salons, check-out lines, and cubicles.

Nanowave Air has three air speed settings of 100, 200, and 300 liters per minute so the

device can be customized to create different airflows for different applications.

Nanowave Air has received Federal Communication Commission ("FCC") certification, Edison Testing Laboratories ("ETL") certification, and Conformance Europeene ("CE") certification. As tested by ETL, all UV-C is contained in the device and no UV-C leaves the device. With these certifications, Nanowave Air™ meets the electrical and safety criteria necessary for launch in numerous countries.

Read the [original article](#) on PR Newswire.