

Antiviral and Antibacterial Respirator

Technology Overview

Respirators are used by healthcare workers in contagious environment to avoid airborne virus.

Some powered air purifying respirators (PAPR) products started to appear with the COVID-19 situation. However, most of such products still have no antimicrobial agent on the HEPA filter, usually too big and heavy, not friendly for use and disinfection.

This product can effectively kill 99% more viruses contained in the trapped droplets on the filter when the droplets are still wet compared with uncoated filters. As the design is targeted for healthcare workers at low-cost, it will be attractive to this segment of the market.

Features & Specifications

The key features of the invention are:

- Can effectively kill 99% more viruses contained in the trapped droplets on the filter when the droplets are still wet compared to uncoated filters.
- Light and compact device (0.86 kg).
- Ease of use and ease-of-donning/doffing design.
- Lower noise design.
- Water spray proof design for easy disinfection process.
- Internal rechargeable battery lasts for about 4 hours. Can insert a backup pocket-size rechargeable battery or a power-bank to extend working time.
- Tool-free design – no bolts and nuts, no tools needed for assembly and disassembly.
- Visual, audio, and blower flow rate oscillation for low battery alert and very low battery level alarm.
- Low-cost design.
- Design for ease of production and servicing.



Customer Benefits

Our product is equipped with an antiviral and antibacterial HEPA filter to effectively kill viruses and bacteria while the trapped droplets are still wet on the filter. It is specifically designed for the general healthcare workers at low-cost, easy to use, low-noise, light-weight, and compact design for working long hours, compatible with most PPE donning/doffing procedures and disinfection processes for reusable devices.

Potential Applications

- Healthcare – General healthcare workers on low-intensity activities (about 40-50% maximum heart rate), in ICU and medical laboratories.
- Air-filtration market especially in electronic industries, hospitals, pharmaceuticals and other environments where microbial contamination is not acceptable.