

# FREQUENTLY ASKED QUESTIONS – IVP (INTEGRATED VIRAL PROTECTION) DEVICES (November 2020)

## COVID19

### **How effective are IVP devices at preventing airborne viral transmission of COVID-19?**

IVP's devices are proven to kill 99.999% of airborne SARS-CoV-2 (COVID-19), anthrax spores (99.98%), and other airborne pathogens.

### **IVP's filters kill airborne particles and viruses. Can they kill viruses that rest on surfaces?**

The unique protection that our filters provide is based on the particles that flow in the air and through the filtration system. Forced airflow will limit particulates that rest on surfaces, drawing them into the filtration system. The best method for destroying surface viruses is with surface cleaning.

### **What makes IVP technology unique with regards to its ability to kill COVID-19?**

IVP's patent pending technology has been proven at the Galveston National Laboratory to destroy 99.999% of the SARS-CoV-2, the virus that causes COVID-19, instantaneously. The core technology inside of IVP devices is a specialized heated (200°C or 392°F) filter. It also destroyed anthrax spores (99.98%) in the same tests. No other existing air filter can catch and kill airborne SARS-CoV-2 (COVID-19) instantaneously.

### **Is this device certified by the FDA?**

IVP devices are permitted to be sold according to FDA guidelines. Our technology has been tested and endorsed by CPR Engineering (FDA-certified), Air Balance, UTMB Galveston National Lab, Texas A&M University Engineering Experiment Station, and Texas Center for Superconductivity at the University of Houston (TcSUH). You can find more information about our research at [research.ivpair.com](http://research.ivpair.com).

## INSTALLATION AND MAINTENANCE

### **How will you know if the system is working?**

When any IVP device is powered on and operating properly the power button will be green. The particle counter installed in the device continuously measures the air quality and displays the particles that have been captured and destroyed.

All IVP products have been extensively tested in reputable labs and have been proven to catch and kill 99.999% of SARS-CoV-2 and 99.98% of anthrax spores in a single pass.

### **Are IVP devices covered by a warranty?**

IVP stands behind our technology: all our products come with a 1-year warranty.

### **Can IVP technology be integrated into existing HVAC systems?**

Yes. IVP has developed mobile devices and permanent HVAC filters that can be retrofitted into any existing residential or commercial system.

### **Where should the device be placed in a room to maximize air purification?**

The ideal location for any mobile IVP device should be near high-traffic areas with clear access to the intake and exhaust fans. It is not necessary to place the devices near AC and heating vents.



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**Can the unit be moved into different rooms?**

Yes. We have 3 mobile devices: the r1, s1, and v1. These can be easily moved between residential and commercial locations. Our r1 room device is portable and can be moved between any room in a home and is light enough to be carried up or down stairs. Our s1 school and v1 venue devices are designed for commercial locations and can be easily moved between rooms or offices.

**How do I determine which device is best for my needs?**

r1 room is for residential locations and can purify up to 500 CFM.

s1 school is for educational institutions and commercial properties with medium-sized spaces and can purify up to 1,000 CFM.

v1 venue is for large commercial spaces and can purify up to 1,800 CFM.

The IVP HVAC filter can be retrofitted into any existing residential or commercial location and can maintain the same level of air circulation as the existing system

**Does an installation of the HVAC units typically include integrating it to the Building Management System?**

Installation does not currently require integration with the building automation system; however, it can have this capability. We install pre- and post-aerosol COVID measurement systems, as well as air IQ lasers to determine VOC PPV, filtration, and ventilation.

**If the filter is heated are there fire safety measures installed in the unit?**

Each filter is fire rated for at least 500°F. There is an auto shutoff on the device if the temperature rises about 392°F.

**Are IVP's devices easy to maintain?**

There is little maintenance required for IVP's family of devices. We recommend that the primary filter be replaced every 1-2 years. The pre-filter should be washed every 3 months.

The IVP HVAC filter should be changed every 1-2 years but can last for 10 years before needing to be replaced. The HVAC pre-filter should be replaced every 3 months.

**How will I know it is time to change the filter?**

Refer to your user's manual for timing on recommended filter changes. Filters should be changed as follows:

r1 – change filter every 1-2 years, the pre-filter needs to be washed every 3 months

s1 – change filter every 1-2 years, the pre-filter needs to be washed every 3 months

v1 – change filter every 1-2 years, the pre-filter needs to be washed every 3 months

You can order replacement filters from [www.wilcoxdistributionco.com](http://www.wilcoxdistributionco.com).

**What other components of the system need to be replaced or maintained?**

The filters should be changed as recommended; however, other than maintaining a clean device, no additional maintenance is required.

**What is the procedure for proper filter disposal?**

IVP's technology ensures that there are no active/living viruses contained on or within the filter. While there is nothing toxic within the filter, it is important to properly dispose of filters in accordance with your state and local laws. Place the filter in an airtight container or bag before disposal.

**How long should I expect the filters to work?**

Primary filters should be replaced ever 1-2 years. See the user's guide for additional details.

**Is special training required to operate the device?**

No. IVP has designed these devices to allow for simple operation and they are optimized for maximum efficiency.

**How should the devices be installed?**

IVP's HVAC filters can be easily retrofitted into an existing system.

IVP's mobile units are easily unpacked and placed into any size room. Refer to the user's guide for set-up and room placement recommendations.

**How much power do the mobile devices use?**

Mobile units typically use 110 V and ~ 15 Amps single phase. In rare situations, 220 V and between 20 and 30 Amps may be necessary. Consult the user's guide for more information.

**What is the electrical load or circuit requirements?**

110 VOLTAGE and ~15 Amps,

**Does the r1 wall device come with the mounting brackets?**

Yes. All IVP units come with all the necessary hardware for set-up and operation.

### [TECHNICAL SPECIFICATIONS](#)

**What is the energy consumption of the system? Does this change among the different units?**

All IVP devices operate with standard 120V power supply. The energy consumption varies depending on the size and CFM of the device.

**How long does it take for IVP devices to fully circulate and purify the air in a room?**

Each room is unique and will circulate the air differently, however an s1 school can circulate the air up to 10,000 ft<sup>3</sup>, 10 times per hour.

**How does IVP technology differ from ionization technology?**

Ionization air purifiers are expensive and can take up to 24 hours to circulate the air in a single room. IVP's devices are the only products scientifically proven to catch and kill 99.999% of SARS-CoV-2 (COVID-19) and 99.98% of anthrax spores in a single pass, recirculating 100% of the air in a room up to 10 times per hour.

**Do IVP devices reduce the viruses that settle on surfaces?**

Yes. Because of the powerful circulation and ability to destroy viruses on contact, all our devices help to minimize the number of viruses and particles that will eventually rest on surfaces.

**If the filter is heated, wouldn't that heat the room?**

The heating process in the filter is self-contained within the system and has been proven to not affect the ambient air temperature of the room.

**Can the devices be monitored and controlled using software or applications?**

This functionality is currently being developed and will be available in future product releases.

**Will IVP devices indicate the level of contamination in the room?**

All IVP mobile devices include a particle counter and will indicate the number of particles that have been captured/and or destroyed with the filter.

**Do IVP devices affect the humidity in the room?**

IVP's devices are air filters and cleaners. They have no impact on the ambient temperature or humidity level of the room.

**Do IVP devices use UVC light?**

IVP devices do not require UVC light, as the patent-pending heated filter destroys all viruses instantaneously and more effectively than UVC or related technologies.

**How loud is the r1 device? Will it disrupt a room meeting (such as a classroom setting or business conference room)?**

The r1 device operates at 50-60 decibels, which is a low volume hum and is not disturbing. There are many devices currently operating in schools and commercial spaces without any noise issues.

**Does my current HEPA filter prevent SARS-CoV-2 from circulating in the air?**

Research has shown that some viruses and spores can be captured in HEPA and other filters. However, under these circumstances, the virus remains active and can be dislodged and recirculated through AC or heating systems. IVP's heated filter destroys airborne COVID-19 instantaneously in a single pass.

**Nickel is a well-known allergen affecting a significant percentage of the population. Has there been any consideration to potential downstream nickel particulate in the indoor environment that may result from thermal degradation of the nickel foam filters?**

Nickel foam was used during the research and testing stages only; we now use safer heating elements, ensuring there are no issues with nickel safety.

**HEPA filters have proven to be an issue in AHUs due to the pressure drop. Please explain how a HEPA filter in this application does not cause a static reduction.**

The heated HEPA system replaces the current filters. Testing in systems show a static drop pressure of 0.8 to 1.0 inches water height at 500 feet per minute air velocity. This does not increase the work power of the fan, which also has a very low energy consumption.