IAQ as a Service
Indoor Air Quality has never been easier

Powered by PURGE VIRUS with Bipolar Ionization
STAY SAFE and HEALTHY

www.PurgeVirus.com
What We Do

**Advanced Disinfection:**
To improve indoor air quality and reduce the spread of pathogens, such as COVID-19, we align the most appropriate technology to existing heating, ventilation, & air conditioning systems.

**Cost-Savings:**
You may have used Software as Service (SaaS) to reduce upfront costs. Now, you can get the same advantage with Indoor Air Quality as a Service (www.IAQaaS.com)

**Added Benefits:**
Low monthly payments instead of upfront costs are just the beginning. We take care of all the installation and the maintenance to save you TIME and MONEY. Focus on operating your business or institution and leave the air quality up to us.
Why Purge Virus

• We provide disinfection solutions for every type of facility.

• Alignment of the most appropriate technology to each facility.

• Premier customer support and installation via our national HVAC strategic installation providers.

• Performance and Testing Reports.

• **Proven technology:** Over 150,000 installations via our Bipolar Ionization (BPI) provider since 2008. Over 1,000 K-12 Schools, and many healthcare applications including hospitals ranging from Duke Medical in North Carolina to the Cleveland Clinic in Ohio.
Positive and negative ions are ubiquitous in outside air, which is why the adage “Go outside for some fresh air” is true. We leverage man-made technology to mimic naturally occurring disinfection found outside in nature and improve indoor air quality (IAQ).

Bipolar Ionization dramatically increases the density of indoor ions/cubic centimeter to create microbial clusters and destroy virus surface structures. Think of the ions as “ninjas” that hunt down the pathogens that are so dangerous to human health.
How it Works

1. Ionization starts by imparting energy to a neutral O₂ molecule

2(a). The O₂ molecule becomes a POSITIVE ION

2(b). The O₂ molecule emits an electron

2. BIPOLAR IONIZATION

3(a). The POSITIVE ION “seeks” pathogens and VOCs, and has a head start over the negative ion counterpart

3(b). The electron is captured by another O₂ molecule creating a NEGATIVE ION

3(c). The NEGATIVE ION “seeks” pathogens and VOCs

4. The charged ions combine with oppositely-charged airborne elements forming clusters, which are more easily trapped in filters

THE RESULTS: Cleaner indoor air and surfaces without harmful ozone production.
A) As the clusters divide to reproduce, bacteria and VIRUS cells are robbed of life-sustaining hydrogen and are destroyed.
B) Odorous gases and aerosols are neutralized on contact with oxygen ions
C) Oxygen ions create a chemical reaction with VOCs breaking down their molecular structure.

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Ions are found in the highest concentrations where the ocean meets the shore and high elevation in the mountains.

Bipolar ionization uses electricity to create the ions found in these desirable locations and supply them into the building, enhancing the indoor air quality to purge COVID-19.

Units of Measure = ions/cc (cubic centimeter)
Waterfalls/High Elevation = 5,000 i/cc
City = 200 i/cc
Inside Buildings = <100 i/cc

With Bipolar Ionization, we ELEVATE indoor air to >1,000 i/cc, which is the target level to purge COVID-19.
Bipolar Ionization equipment

The special carbon fiber ion emitters are soldered into the circuit traces for the ribbon devices (ideal for ductless HVAC) and the emitters are mounted on the other devices for ducted HVAC.

- Designed for 3,200 CFM or 8 tons (e.g. PTACs) This ribbon system comes in 18” and 36” lengths
  
  **Ion Production:**
  
  > 35 Million +/- Ions/cc /ft.

- Designed for 4,800 CFM or 12 tons ideal for mid size HVAC systems
  
  **Ion Production:**
  
  > 400 Million +/- Ions/cc

- Designed for large HVAC e.g. 8,000 CFM / 20 tons or larger (any length up to 240 inches in 6-inch increments: 50–250 CFM per inch of bar.)
  
  **Ion Production:**
  
  > 840 Million +/- Ions/cc per 6 in.

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Ionizer devices are sized to the HVAC cubic feet per minute (CFM)

**TARGET ION DENSITY**

Bipolar Ionization effectiveness is based on the number of ions in the space.

For viruses: target air purifying ion density is 1,000 ions/cc in the space.
Bipolar Ionization science

The bipolar ions surround the hemagglutinin (surface proteins that form on organisms and trigger infections) and change into highly reactive hydroxyl radicals. The ions *destroy the virus surface structure*, in the case of coronavirus the spikes, on a molecular level. As a result, the virus cannot cause infection, even if it enters the body.
TESTING COUNTS: 99.4% reduction rate on a SARS-CoV-2 (COVID-19) surface strain within 30 minutes, the first instance in which an air purification company has effectively neutralized SARS-CoV-2 in this manner.

The laboratory study was designed to mimic ionization conditions like that of a commercial aircraft’s fuselage. Based on viral titrations, it was determined that at 10 minutes, 84.2% of the virus was inactivated. At 15 minutes, 92.6% of the virus was inactivated, and at 30 minutes, 99.4% of the virus was inactivated.
Measurement and Verification

**Our field teams have ion meters to measure and verify the performance of the installed bipolar ionization devices.**

**ION METER:**

The Air Ion Counter Model AIC2 is a handheld meter designed to measure ion density— the number of ions per cubic centimeter (ions/cc) in air. It measures this number separately for positive and negative ions (+ and – ions are usually present simultaneously).

This instrument is a true ion density meter, based on a Gerdien Tube Condenser design, and it contains a fan which draws air through the meter at a calibrated rate. The unit comes as a dual-range model; AIC2-R1 has selectable maximum ranges of both 2 million and 200 million ions/cc. For comparison, a typical outdoor environment has 100 to 1000 ions/cc.
THANK YOU

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