



Improving Your Lifestyle  
One Breath At A Time

## About O2Prime™ Solutions

O2Prime's™ innovated needlepoint bi-polar ionization's (NBPI) technology is a pioneer in the indoor air quality industry. We are the ground-breaking, uncontested market leader creating sustainable solutions for numerous markets including commercial, residential and industrial, to name a few.

O2Prime's™ technology is powered by twelve granted patents and numerous other patents pending. O2Prime's™ technologies are all about "Changing your lifestyle one breath at a time": reducing Energy, improving the Environment, and addressing the three primary contributors to poor Indoor Air Quality (IAQ): Particulates, Odors, & Pathogens as we call it E<sup>2</sup>-POP.

### E<sup>2</sup>-POP

**Energy:** Commercial buildings are the single largest consumers of energy. The O2Prime™ ionization process allows commercial buildings to safely reduce the amount of outdoor air required to operate. This equates to a safe, comfortable environment while consuming as much as 20%-30% less energy.

**Environment:** As the largest consumers of energy, commercial buildings represent a major contributor to greenhouse gas emissions and global warming. The O2Prime™ ionization system reduces the amount of energy necessary to treat and clean air, which in turn reduces the need for energy production thus lessening pollutants from sources of electric and thermal generation.

**Particulates:** During O2Prime's™ ionization process, airborne particulates (dust, pet dander, pollen) are treated and then drawn together increasing their size and mass. Larger particulates are more easily captured effectively increasing the efficiency of an HVAC system's air filtration system.

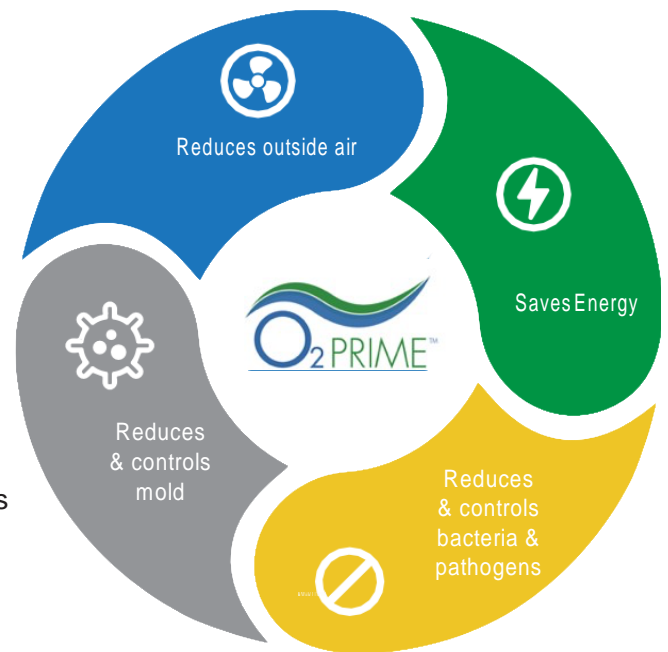
**Odor and Volatile Organic Compounds (VOCs):** During O2Prime's™ ionization process, cooking odors, pet odors, and chemical odors, (like formaldehyde) are broken down into basic compounds free of any smell.

**Pathogens:** During O2Prime's™ ionization process the ions created by the plasma generator attack and kill the virus, mold spores, and bacteria. The ions steal away hydrogen from the pathogens rendering them dead.

### How Ionization Works

O2Prime's™ advanced plasma air purification technology works to safely clean the air inside commercial and residential buildings. The patented technology uses a precise electronic charge to create an electrical field filled with high concentrations of ions. When these ions are injected into the air stream they break down passing pollutants and gases into harmless compounds like oxygen, carbon dioxide, nitrogen, and water vapor. When these ions come in contact

# Always Innovating. Never Imitating.



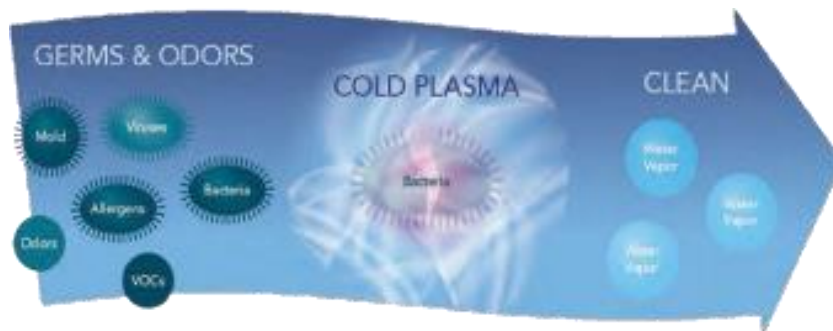
O2Prime's™ technology is truly the market leader in its industry with 150,000 installations and growing!

with harmful pathogens such as virus, bacteria, or mold, they steal away hydrogen molecules from the pathogens. Without hydrogen, the pathogens are left without any source of energy to carry on and they die. Unlike air purification technology which relies on ultraviolet light, the ions produced by O2Prime's™ technology can travel long distances within the air stream, cleaning the air far from the physical location of the plasma generator.

### O2Prime™ Ions: Safely Cleaning the Air You Breathe

What is an ion you may ask? An ion is a molecule that is positively or negatively charged, meaning that it has electrons to give, or needs electrons to become uncharged, thus becoming stable.

O2Prime's™ technology generates the same ions as Mother Nature creates with lightning, waterfalls, ocean waves, and the like. It's Mother



Nature's way of cleansing the air naturally and creating a healthy environment. Mother Nature uses energy to break apart molecules. The only difference between O2Prime's™ technology and Mother Nature is that O2Prime's™ technology does it without developing detectable ozone. 3rd party testing by UL and Intertek/ETL to the UL 867 ozone chamber test confirmed ozone levels less than 0.00PPM!

### Caution Not All Technologies are Created Equal

Photocatalytic Oxidation (PCO) technologies chemically manufacture ions using UV radiation shined onto either Titanium Dioxide (TiO2) or a combination of TiO2 and other metals to create a catalytic reaction. The Centers for Disease Control (CDC) provided Current Intelligence Bulletin 63 to inform the general public as well as requesting any manufacturers using TiO2 to inform their employees and clients of the cancerous risks involved with TiO2. PCO technology generates high levels of ozone as well!

### Applications

#### Save Energy By Reducing Outside Air

Utilizing ASHRAE 62 Indoor Air Quality Procedure (IAQP) combined with O2Prime™ air purification technology, outside air may be reduced by up to 75% in non-health care applications, subject to building pressure. The IAQP allows air purification to be applied to clean the air within the building from the contaminants of concern, thus allowing the outside air to be reduced since the outside air is no longer required to dilute the contaminants of concern.



O2Prime's™ technology has been 3rd party tested, produces ions that are already in our environment and creates no ROS or undesired byproducts like PCO technologies.



Cooling coils become clogged over time and biofilm grows on the coils. This growth creates an insulating layer between the fin surface and the air stream which causes the chiller/compressor to work harder by providing more chilled water or higher refrigerant pressures. The biofilm reduces thermal transfer. The added biofilm and debris will reduce the “free” passageways for the air to flow and require the fan to work harder. The O2Prime™ AH solution will kill the biofilm on the coil surface, the drain and drain pan. When the cooling coil starts to condense moisture, the biofilm will run off with the condensate down the drain.

### **The O2Prime™ AH Advantages Over UV Lights**

No replacement parts and no glass tubes with mercury in the air stream:

- No visible light; therefore, no safety precautions such as door switches are required
- Less energy required – only 15 watts of power up to 60,000 CFM using the O2Prime™ AH
- O2Prime's™ technology cleans the entire depth of the cooling coil
- O2Prime's™ technology kills pathogens downstream from the system and it's not line-of-sight like UVC
- O2Prime's™ technology controls odors, UV does not
- O2Prime's™ technology mounts directly to the cooling coil frame, UV light requires a separate frame system requiring more install labor

### **O2Prime's™ Technology Engineering Software**

Over 1,000 projects have been designed using O2Prime's™ Technology IAQ spreadsheet based on ASHRAE 62. In some cases, outside air quantities were reduced to as little as 2.5 CFM per person!

### **Residential and Commercial Solutions**

**O2Prime™ is “Always Innovating, Never Imitating” and our new products prove it.**

O2Prime™ has many “firsts” in the HVAC industry:

- First Needlepoint Ion Bar
- First Flexible Needlepoint Ion Bar
- First Modular Needlepoint Ion Bar
- First Self-Cleaning, No Maintenance Needlepoint Ion System
- First Universal Voltage Input System 24VAC to 240VAC

Utilizing ASHRAE 62 Indoor Air Quality Procedure, and O2Prime's™ technology, the Tampa Bay Arena Avoided 700+ tons in chiller capacity, reduced first costs by over \$1 million and saves over \$115,000 per year in energy!

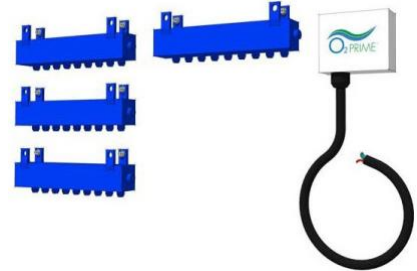
### O2Prime™ O2P OC 48

The patent-pending O2Prime™ O2P OC 48 is a self-cleaning, needlepoint carbon, fiber brush, bi-polar ionization generator with a capacity rating from 0-4,800 CFM or 12 tons. The units are compact for mounting to the fan inlet on most HVAC systems. The unit comes standard with a universal voltage input with a range of 24VAC to 240VAC. BAS alarm contacts rated 250VAC/1A, local LED for operational status and a field programmable cleaning cycle, preset to clean every three days.



### O2Prime™ AH

This patent-pending O2Prime™ AH is a modular ionization system that allows any size ionization bar to be field erected up to any length required. The all-composite and carbon filter construction allows the product to be mounted in any environment regardless of corrosive chemicals in the air. Universal voltage selector switch, illuminated On/Off switch, plasma on indicator light, six HV output ports, alarm contacts, magnets for ease of installation, and auxiliary terminals for connection of an optional O2Prime™ ID ion sensor are all included as standard. The O2Prime™ AH has passed the UL867 ozone chamber test and has been certified by UL 2998 as an ozone-free device.



### O2Prime™ IC

The patent-pending, O2Prime™ IC is the world's first self-cleaning, no maintenance air purification system designed to provide whole building air purification in forced air systems applications up to 4,800 CFM or 12 tons. Universal voltage, digital display, alarm contacts, and a weatherproof housing are included as standard.



### O2Prime™ iMEASURE

The patent-pending O2Prime™ iMEASURE takes the O2Prime™ iDETECT P to the next level. This sensor is designed to be wall or duct mounted and measures ion levels in real time through sampling the air. It provides a 2-IOVDC signal to the BMS corresponding to a field acceptable range. The unit requires 12-24VDC to operate.



### O2Prime™ TVOC

The O2Prime™ TVOC sensors are designed to measure TVOCs (odors) from 0-5,000 PPM to prove what the ions are actually doing to the air quality. These sensors can be duct mounted or space mounted. In some installations, a duct mounted sensor mounted upstream and downstream from the O2Prime™ AH proves the one pass effectiveness of the ionization system.



### O2Prime™ O2P OC2 24

The patent-pending O2Prime™ O2P OC2 24 units are self-cleaning, needlepoint carbon, fiber brush, bi-polar ionization generator with a capacity rating of 0-2,400 CFM or 6 tons. The units are compact for mounting to the fan inlet on most HVAC systems. The unit comes standard with a universal voltage input with a range of 24VAC to 240VAC. BAS alarm contacts rated 250VAC/1A, local LED for operational status and a field programmable cleaning cycle, preset to clean every three days.



## O2Prime™ iDETECT D

The O2Prime™ iDetect D was designed for use with the O2Prime™ AH. It mounts in the ductwork and provides an on/off status that the output of the bar is above the sensor setpoint. The sensor operates from 24VAC to 240VAC and has a field selectable ion sensing range.



## O2Prime™ ELECTRONIC FILTER

O2Prime™ electronic filters are designed to dramatically improve filtration performance through the use of “electronic polarization” while at the same time minimize pressure drop. The combination of these carefully engineered processes results in highly efficient filters. Both from a filtration and energy perspective. Low-pressure drop and high efficiency to deliver this unique electronic air cleaner necessary for today’s IAQ needs—these filters come in many sizes 1” and 2”.



## O2Prime™ DASHBOARD - ONLINE MONITORING

O2Prime™ now offers online monitoring to confirm the indoor air quality in any application. The system utilizes WiFi sensors connected to an O2Prime™ router that sends the data to O2Prime’s™ web server. Users are assigned unique log in credentials and can login from anywhere there is an internet connection. Sensors available include TVOC, CO2, temperature, humidity, PM 2.5, PM 10, Ion Status and Ion Levels. Alerts can be set to send alarm emails when parameters are out of range. The system also provides trend reports to see how the system is working overtime and compare the air quality results from month to month, day to day or hour by hour.



According to the American College of Allergy, Asthma, and Immunology, nearly 50 million Americans suffer from seasonal allergies associated with pollen and mold. Airborne mold spores- Reduced 99.5%

Pathogen	Time in Chamber	Kill Rate	Test Agency	
T.B.	60 minutes or less	69.09%	EMSL	The kill rates are indicative of those in the entire space
C. difficile	30 minutes or less	86.87%	EMSL	
Norovirus	30 minutes or less	93.50%	ATS Labs	
MRSA	30 minutes or less	96.24%	EMSL	90% of MRSA reduction will occur every 24 minutes
Mold Spores	48 hours or less	99.50%	GCA	
E. coli	15 minutes or less	99.68%	EMSL	
Legionella	30 minutes or less	99.71%	EMSL	
VRE	15 minutes or less	43.78%	EMSL	Bacterium that can live on catheters and surfaces and can cause infections
VOCs	Less than 2 hours	100%	Field Tested	



O2Prime's™ technology is the only active air purification system that has been designed and approved to operate in commercial and private aircraft. Aviation applications require passing the stringent DO-160 test proving the technology does not generate EMF, line noise or interfere with the avionics in any way. This is important to note since O2Prime's™ technology is used in many healthcare applications and interference with healthcare imaging equipment would be detrimental to patients.

### Industry Associations





# Control The Air You Breathe

