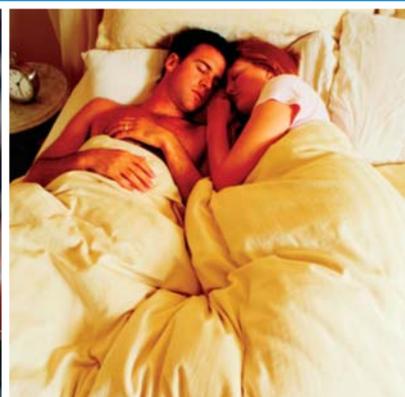
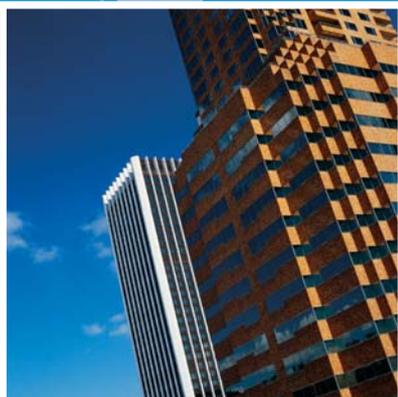


ULTRAVIOLET AIR & OBJECT PURIFICATION SYSTEMS



**PURIFYING AIR
AT THE SPEED OF LIGHT™**



SANUVOX

Get In Touch

 Call: [0845 6880112](tel:08456880112)
 Email: info@adremit.co.uk

Our Address

Puravent, Adremit Limited, Unit 5a, Commercial Yard,
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Established in 1995, Sanuvox Technologies' mission was to design a line of residential and commercial Ultraviolet Air Purification Systems that would address Indoor Air Quality (IAQ) and Sick Buildings. Innovation and the understanding of ultraviolet technologies has produced a line of residential and commercial products that are unsurpassed in the industry.

Sanuvox Ultraviolet Air Purifiers will neutralise biological & chemical contaminants such as mould, bacteria, viruses, spores, allergens, cigarette smoke, cooking & pet odours, garbage & sewer odours, VOCs, diesel fumes and thousands of other airborne contaminants.

Sanuvox Technologies has spent years developing the Ultraviolet Technology which would make it possible to effectively and efficiently treat moving air with UV Energy. Within these pages you will learn about Sanuvox and how experience and understanding has lead to a line of multi-patented residential, commercial and industrial purifiers that cannot be matched in quality, performance, variety and cost efficiency.



SANUVOX AT A GLANCE

Multi Patented Ultraviolet Systems

Global Leader in Ultraviolet Air & Object Purification

Tested by:

McGill University

Penn State University

Tested & Published Results in:

The Lancet Medical Journal Infection Control & Hospital Epidemiology
(The University of Chicago Press)

The United States Environmental Protection Agency (EPA)

& The National Homeland Security Research Center (NHSRC) against
Biological Warfare Agents and bacterial and viral contaminants



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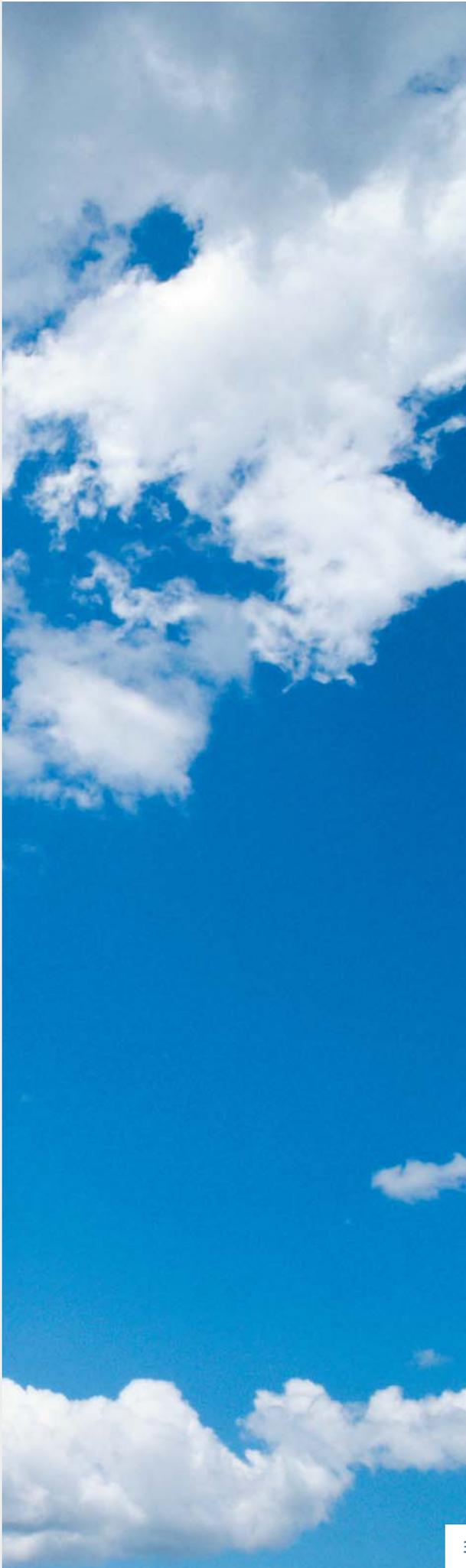


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WHY SANUVOX?

The Battle for Air Supremacy (Air Purification)

Multi patented ultraviolet systems designed to neutralise up to 99.999% of biological & chemical contaminants that travel throughout the home, building and facility.



For Coils or Stationary Objects (Mold on Coils)

A complete line of patent pending Ultraviolet Object Purifiers designed specifically for mould on A/C coils. High-Intensity UVC Lamps mounted to Anodised Aluminium Parabolic Reflectors direct virtually all the UV Energy onto the coil without losing UV intensity from the top, bottom and behind the Lamp.



Quality Control (Attention to Detail)

Before any system ships from our manufacturing facility, each purifier is tested to meet Sanuvon strict performance and quality guidelines.



Third-Party Testing (Tested & Proven)

Sanuvon Ultraviolet Systems have been tested to meet strict "Kill Rates". Third-Party testing includes McGill University, The Montreal Chest Institute, The United States Environmental Protection Agency (EPA) & The National Homeland Security Research Center (NHSRC) as well as independent laboratories.



Knowledge is Power

There is always a UV Specialist to answer your questions. Sanuvon Application and Sizing Team will spend the time needed to make sure you and your customers are well informed. Just call us and it will be our pleasure to answer any and all of your questions.



Warranty & Support (We will stand behind you and your customer)

Sanuvon offers the most comprehensive warranty available. It is not uncommon for Sanuvon components (including the UV Lamp) to be guaranteed up to 12X longer than other manufacturers.



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THE IMPORTANCE OF PARALLEL INSTALLATION

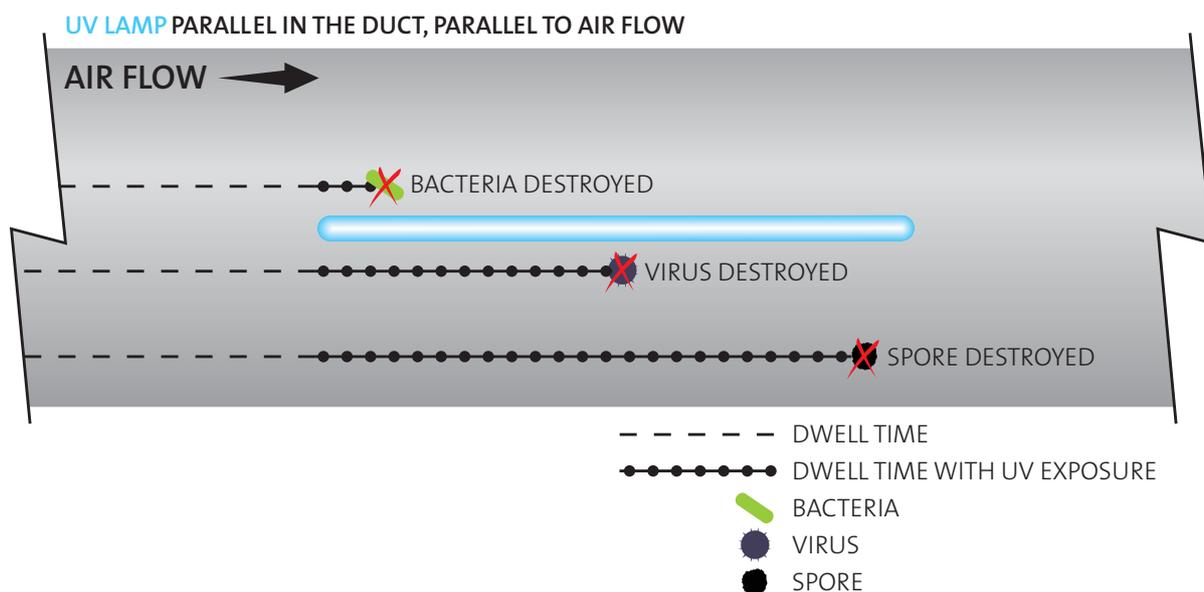
The Importance of Parallel Installation

In order for Ultraviolet Light to be effective in destroying biological contaminants in the moving air-stream, there has to be a specific amount of UV power delivered to the contaminant for a specific amount of time.

Contaminants require varying dosages of UV energy (μw) to destroy. Typically, bacteria are the weakest contaminants, requiring the least amount of energy. As a general rule, a virus is usually more resilient to UV energy, requiring more than twice the amount of UV energy than bacteria. A spore is typically the hardest to destroy, requiring more than 5X the amount of UV energy compared to a virus.

Research on Sanuvox systems show that PARALLEL installations of the Lamp(s) in the air-stream will result in greater contact time (dwell time), allowing for more UV energy to be delivered to the bacteria, virus or spore, resulting in a high "Kill Rate". But more importantly from a practical standpoint, the parallel installation eliminates Lamp surface fouling due to direct air impingement. The parallel Lamp orientation provides the best overall performances and efficiency.

PARALLEL INSTALLATION



Sanuvox proprietary Mercury Vapour Ultraviolet Lamps produce two UV wavelengths. UVC (Germicidal 254nm) and UVV (Oxidizing 187nm) pure fused quartz glass that are combined into one single UV Lamp emitter.

UVC energy attacks the DNA of a cell, penetrating the cell membrane, breaking the DNA structure of the microorganism, inhibiting reproduction. UVC is effective in destroying biological contaminants and odors such as mould, bacteria and viruses. The Centers for Disease Control (CDC) recommends this method for destroying viruses such as tuberculosis.

UVV (Vacume UV) is used for Oxidization; this is the portion of the Lamp that will destroy chemicals and odours, such as cigarette smoke, VOCs, diesel fumes, formaldehyde, amongst others.

Both UV wavelengths work together to destroy thousands of biological and chemical contaminants that continually circulate within the building's envelope.

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STRAIGHT LAMP

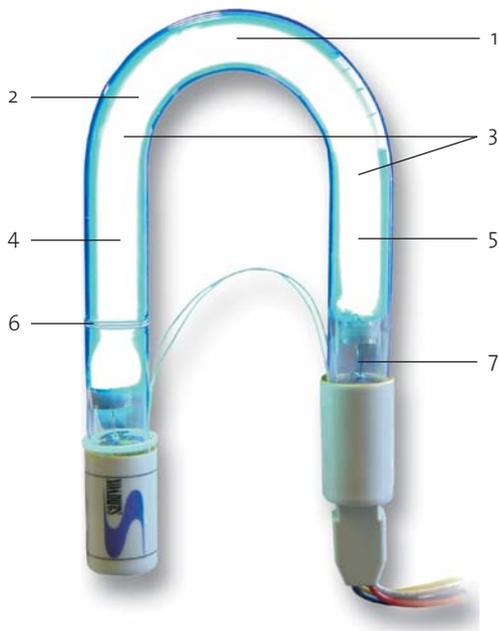


Sanuvox Ultraviolet Lamps are available in a wide range of proprietary designs and UV wavelengths. Sanuvox Lamps are available as both 19mm “Single Zone” UVC (254nm) Germicidal wavelength that will destroy biological contaminants & 19mm “Dual Zone” Lamps incorporating UVC (254nm) Germicidal & UVV (187nm) Oxidizing wavelengths designed to destroy biological & chemical contaminants. Single zone UVV Oxidising Lamps are also available for specific applications.

Each Sanuvox Lamp is manufactured to meet strict quality control and efficiency guidelines and are tested before they leave the factory.

Sanuvox Ultraviolet Lamps are unquestionably the highest quality UV Lamps available. Sanuvox incorporates the very latest in UV Lamp technologies, guaranteeing longest Lamp life, low mercury content, with features such as anti-solarisation coatings, proprietary gas mixtures, pure fused quartz glass, and heavy duty filaments that provide extra long life. For shatter proof applications such as food processing, packaging, pharmaceuticals, etc. Lamps may be special ordered with a shatter proof teflon sleeve.

“J” LAMP



- 1 - High-Intensity 19 millimeter Dual Zone UVC Germicidal 254nm & UVV Oxidizing 187nm Lamp
- 2 - Internal Alumina Coating (IAC): Prevents Solarisation of the Lamp & increases stability and efficiency
- 3 - Proprietary “J” Shape Lamp effectively takes the place of two Lamps
- 4 - Proprietary Mercury Vapor Gas Mixture (MVGGM) produces the most stable, cleanest burning Lamp
- 5 - Hot Cathode Pure Fused Quartz Glass Guarantees the highest quality, cleanest mineral glass and highest UV efficiency
- 6 - Proprietary Splice: This is where the UVV Glass is fused to the UVC Glass. The UVC Glass makes up at least 90% of the Glass surface. UVV makes up the remainder (10% or less)
- 7 - Heavy Duty Filaments provide extra long Lamp life

POWER SUPPLY



Sanuvox Systems incorporate the latest proprietary high performance electronic power supplies.

Features include dual voltage, line surge protection, current compensation, higher efficiency and agency approvals.

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THE IMPORTANCE OF REFLECTION

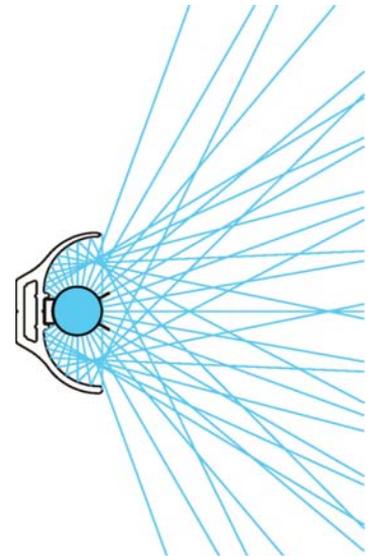
All patented Sanuvox Ultraviolet Air Purifiers and CoilCleaners use Aluminium Reflectors to direct the UV Energy where needed most. Select Sanuvox systems use an Aluminium Reflecting Tube which contains the UV Energy making for a concentrated dose of UV, while Sanuvox UV CoilCleaners use Parabolic Aluminium Reflectors to direct the UV Energy.

The use of Aluminium Reflectors is an integral part of Sanuvox proprietary systems. By using Reflectors, Sanuvox is able to maximize virtually all the UV energy, either by concentrating the UV energy, or by directing the UV energy.

A flashlight or a car's headlight uses a Reflector to direct the Light where needed most. UV energy is no different; a Reflector is needed to maximize UV efficiency and intensity.

Aluminium has one of the highest co-efficiencies of reflectance at >85%.

REFLECTING PATTERN



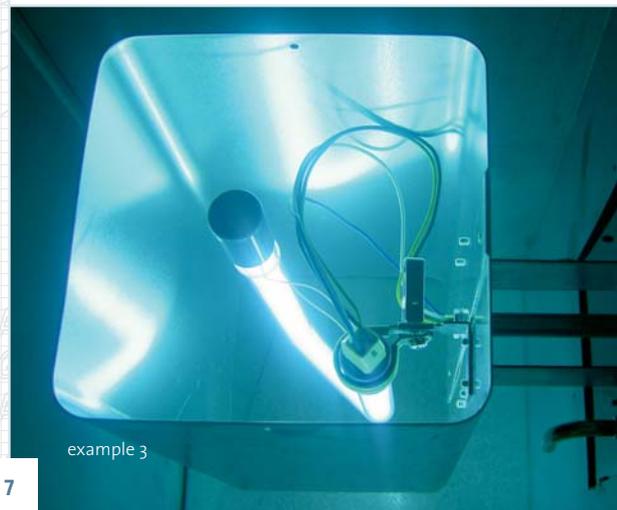
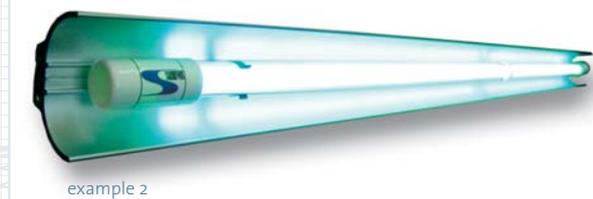
BENEFITS OF REFLECTION

- Direct virtually all the Lamp's UV energy where needed most
- Drastically increases effective Lamp life
- Allows for the Lamp to be self-cleaning by directing UV back in on itself, burning off bio-aerosols that adhere to the Lamp glass surface
- Protects plastics, rubber and occupants from UV exposure
- Supports Lamps that can be as long as 1524mm protecting them from breakage
- Maintains Lamp temperature at a more constant level

A UV Bio-Wall uses five Anodized Aluminium Parabolic Reflectors to project the UV energy outwards from the center of the duct. (example 1)

A CoilClean IL Object Cleaner uses the Reflector to direct the UV energy onto the evaporator coil and drainpan, destroying and preventing mould and other microbial growth. The Reflector protects the Lamp from contaminants striking and adhering to the glass and maintains the Lamp at a stable temperature. (example 2)

The Sanuvox In-Duct UV Air Purifiers use an Aluminium Reflecting Tube which houses the UV Lamp, making for a concentrated self cleaning dosage of UV energy. (example 3)



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IN-DUCT ULTRAVIOLET AIR PURIFIERS



R1700GX / R4000GX In-Duct

Designed to be installed in the return or supply plenum. As the airflow passes through the R1700GX or the R4000GX's Aluminium Reflector Tube, the proprietary Sanuvox process destroys the contaminants that would otherwise be distributed throughout the ventilation system.

These High-Efficiency Air Purifiers use a proprietary split UVC/UVV (Germicidal 254nm / Oxidizing 187nm) Lamp to destroy biological & chemical contaminants including odors. The 3 year warranty includes the UV Lamp & all replacement Lamps. Purifying area is up to 158 square meters for the R1700GX from 158 to 372 square meters for the R4000GX.

Contaminated air enters the Sanuvox UV Air Purifier parallel to the UV Lamp, increasing contact time with the UV energy.

The Turbulator slows, spins and mixes the air around the "J" Lamp.

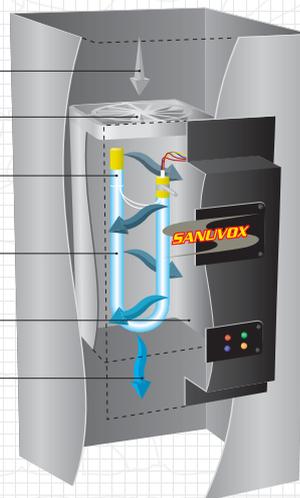
The UV-V section of the Lamp first destroys chemicals and odours.

The UV-C germicidal section then destroys biological contaminants.

The Aluminium Reflector Tube intensifies the UV energy for optimal purification.

The treated air then circulates through the home ventilation system.

After approximately 2 hours of operation, the Sanuvox purifier will have destroyed in excess of 80% (average) of the contaminants in the home.



Ventilation Duct

R1700GX IN-DUCT



Up to 158 sq. m Building

R4000GX IN-DUCT



From 158 sq. m to 372 sq. m Building
*Commercial 3400 m³/h model also available

FEATURES

- Eradicates bacteria, viruses and mould
- Destroys chemical and biological odours
- High Efficiency patented design
- High Intensity UVC/UVV Quartz Lamp
- Average UV intensity inside Aluminium Reflector Tube: R1700GX = 10,212 microwatts per/cm²
R4000GX = 16,479 microwatts per/cm²
- Most effective UV Air Purification System available
- LED "Smart Lamp System" Visual Status Display
- In-Duct installation for whole building purification
- 3 year warranty on parts including UV Lamp
- CSA C/US Certified & CE Approved

ACCESSORIES

- Remote Wiring Kit: Allowing the control box to be detached from the reflecting tube. Part# REMKIT
- 28mm Fiberglass Ductboard Mounting Kit for R1700GX. Part# FIBER1700-1. For R4000GX. Part# FIBER4000-1
- 42mm Fiberglass Ductboard Mounting Kit for R1700GX. Part# FIBER1700-1.5. For R4000GX. Part# FIBER4000-1.5

HVAC SYSTEM



Return or Supply Plenum Installation

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UV BIO-WALL QUATTRO



UV Bio-Wall QUATTRO In-Duct

Inspired by the overwhelming success of the Commercial UV Bio-Wall, the QUATTRO is designed as a Light Commercial / Residential In-Duct UV Air Purifier.

The QUATTRO will treat the entire duct at one time, destroying up to 99.99% of the biological and chemical contaminants in the air-stream.*

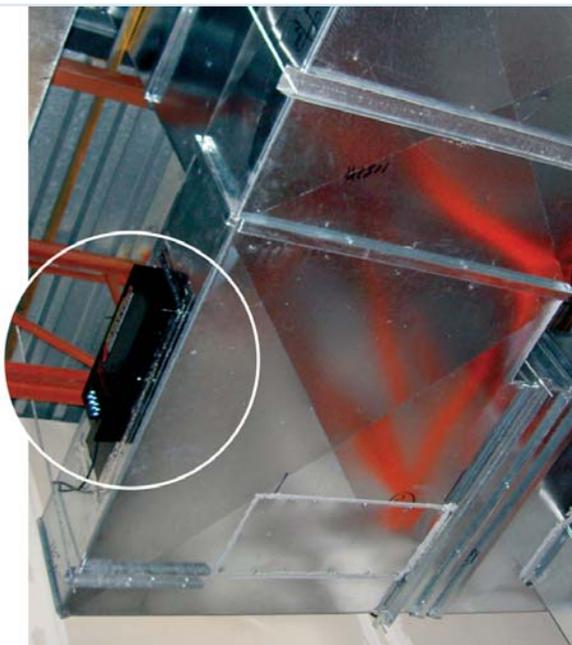
The Quattro includes three (3) 457 mm High-Intensity Pure Fused Quartz UVC Germicidal Lamps and one (1) 457 mm High-Intensity Pure Fused Quartz UVC / UVV Lamp, which are attached to four (4) Anodized Aluminium Parabolic Reflectors and are mounted parallel to the air-stream.

Adjustable clutch mechanism allows the Lamps and Reflectors to be extended up to 381 mm from the duct wall so the assembly can be positioned in the center of the duct-work, creating a wall of Germicidal UV energy up to 609 mm deep.

There are no air purifiers on the market that can match the power, intensity and dwell time that the UV Bio-Wall series can deliver.

* Percentage of biological destruction will depend on: size of duct; velocity of the air where the QUATTRO is installed; contaminants to be destroyed; percentage of outside make-up air.

IN-DUCT INSTALLATION



FEATURES

- Commercial / Residential In-Duct UV Air Purifier
- Treats the entire duct on one pass
- Destroys up to 99.99% of biological contaminants on one pass
- Destroys chemicals & biological odours
- Installed PARALLEL to the air-stream resulting in greater "Dwell Time" between the Air & the UV Lamps
- 1,600 microwatts per/cm² of UV intensity @ 914mm
- Four 457 mm High Intensity 19mm Pure Fused Quartz Lamps
- Four Aluminium Anodised Parabolic Reflectors intensify & maximize 360° of UV Energy
- Pressure Sensor turns purifier On & Off. Simple installation, just "Plug & Play"
- LED "Smart Lamp System" Visual Status Display
- Four High-Output Electronic Rapid-Start Ballasts
- Adjustable Clutch mechanism allows for Reflectors & Lamps to easily extend up to 381 mm to the center of a 762 mm duct
- Patented Design & Sanuvox Quality
- Recommended Lamp change-out: Commercial: 2 years / Residential: 3 years
- CSA C/US Certified & CE Approved

ACCESSORIES

Bio-Film Aluminum Foil for increased reflectivity. 609 x 1,800 mm. Part# MSC7

Technical Specifications on page 26-27

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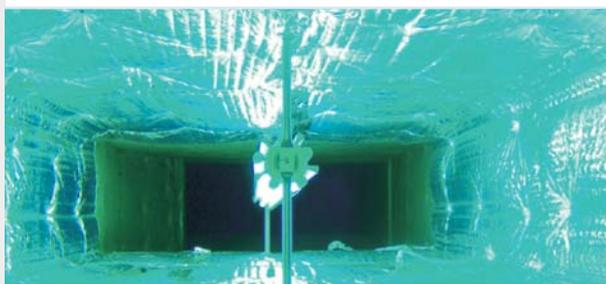
IN-DUCT ULTRAVIOLET AIR PURIFIERS



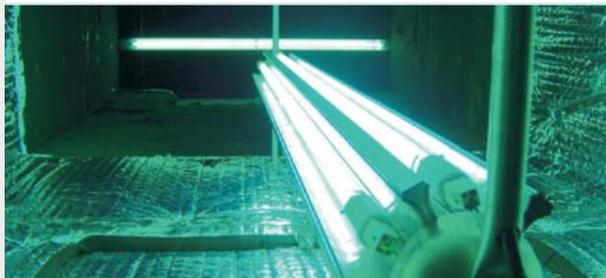
UV BIO-WALL



Installing parallel to the air-stream increases dwell time (contact time) with air



Creates a wall of germicidal UV energy in excess of 6 feet deep destroying airborne contamination



Severe chemical and odour applications: a single Multi-split lamp working in conjunction with the UV bio-wall is installed up-stream



* UV Bio-Wall Ballast & Control Panel

Commercial UV Bio-Wall In-Duct

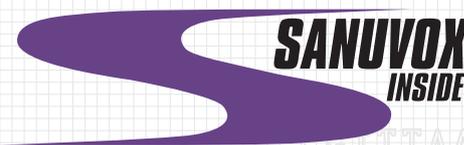
The UV Bio-Wall provides a “barrier wall” of UV Energy destroying biological and chemical contaminants passing through it.

Each Bio-Wall has 5 High Intensity 19mm Pure Fused Quartz Lamps, which are mounted to Aluminium Anodized Parabolic Reflectors that reflect the full 360° of Germicidal Radiation. The Bio-Wall is mounted parallel to the airstream in order to maximize the contaminant's contact time with the UV Energy.

The Bio-Wall is equipped with a monitoring display built into the ballast box which includes a digital visual hour accumulator, monitoring LEDs & “Lamp Out” alarms.*

The number and length (can be up to 1524mm long) of Bio-Walls will depend on the size of the duct, the velocity of the air moving within the duct, the specific contaminants to be treated and the desired % kill.

See bottom of page 27 for explanation of Building Automation Monitoring Software.



FEATURES

- Drastically improves Indoor Air Quality
- Continuously treats the entire duct
- Destroys up to 99.99% of biological & chemical contaminants on one pass
- Available 457 mm to 1524 mm Lamp lengths
- 5 High-Intensity Pure Fused 19mm Quartz UVC Lamps
- 5 Anodized Aluminium Parabolic Reflectors maximizes 360° of UV Energy
- Digital Hour Accumulator. LED & Audible Alarm on Ballast Control Panel*
- Available with remote computer monitoring that can be tied into the buildings automation. Included software monitors Lamp life, system status and history (see bottom of page 27 for full description)
- Tested by The EPA & The National Homeland Security Research Center achieving greater than 99.97% destruction on Biological Warfare Agents on one pass
- CSA C/US Certified & CE Approved

ACCESSORIES

- **For Elevated Chemical & Odour Applications** Multi-Split Lamps w/ Reflector ranging from 304 mm to 1524 mm lengths

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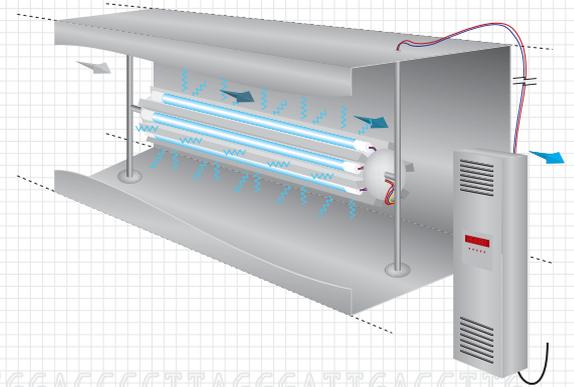
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IN-DUCT ULTRAVIOLET AIR PURIFIERS

UV BIO-WALL

Standard Indoor Air Quality Installation

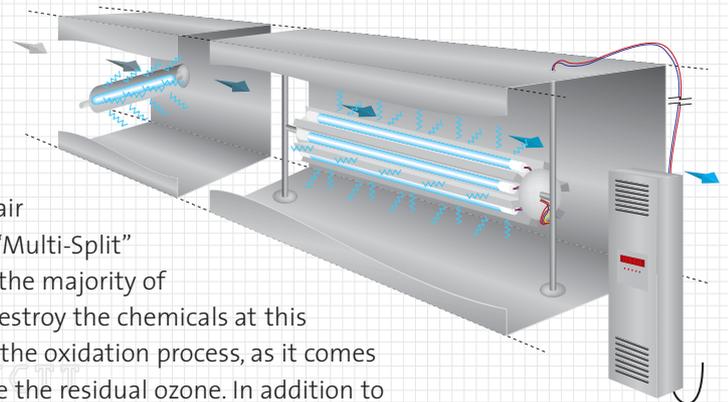
This installation uses the standard UV Bio-Wall. Designed for “all-around” chemical & odour control as well as drastic biological destruction. The UV Bio-Wall produces a UVC Germicidal wall destroying the biological contaminants passing through it. A small portion of UVV Oxidising glass is used to destroy chemical contaminants and odours. The UV Bio-Wall can be sized for any duct size at any velocity of air, for any desired kill percentage on any biological contaminant.



UV BIO-WALL WITH MULTI-SPLIT

Elevated Chemical & Odour Option

If the application requires a higher level of odour/chemical control, “Multi-Split” fixture(s) are installed upstream of the UV Bio-Wall(s). This perpendicular mounted UV Lamp produces elevated oxidation levels, and insures that all of the air moving in the duct will be treated. The distance between the “Multi-Split” Lamp and the UV Bio-Wall acts as a Reaction Chamber where the majority of chemicals and odours will be destroyed. Oxidation is used to destroy the chemicals at this point in the process. If there is residual ozone remaining after the oxidation process, as it comes in contact with the UV Bio-Wall, the Bio-Wall will then catalyze the residual ozone. In addition to catalyzing the residual ozone, the UV Bio-Wall will also destroy the biological contaminants in the air.



TESTING

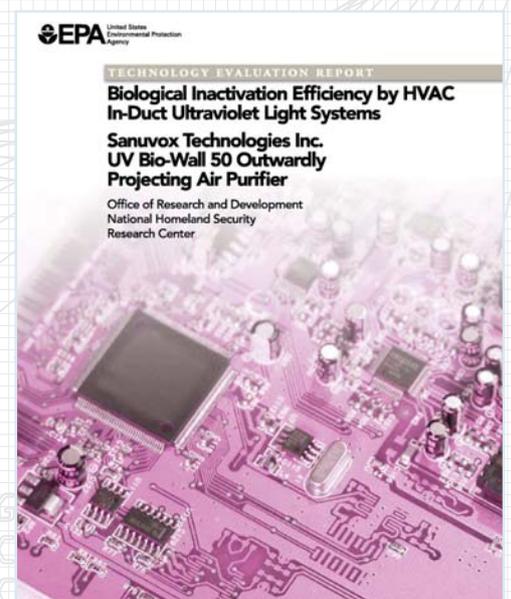
Tested by The Environmental Protection Agency (EPA) & The National Homeland Security Research Center (NHSRC) on Biological Warfare Agents (BWAs).

A SINGLE UV Bio-Wall 50” (available up to 60” Lamp lengths) showed greater than 99.97% destruction on one pass on airborne bacteria, 99% on viral & 93% on spore.

Testing under task order 1112 of the contract between EPA and Battelle Memorial Institute for implementation of the Technology Testing and Evaluation Program (TTEP was established by the National Homeland Security Research Center with the U.S. Environmental Protection Agency’s Office of Research & Development).

<http://www.epa.gov/NHSRC/pubs/erUVSanuvoxo626o6.pdf>

See page 22 to read the EPA Executive Summary testing.



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STAND-ALONE AND OR DUCTED MODELS



P900GX Portable UV Air Purifier

The P900GX has all the benefits of Sanuvox's patented system in a portable air purifier weighing only 5 kg. The P900GX's variable speed blower pulls the air into the reflective Aluminum Reaction Chamber parallel to the UV Lamp where the Dual Zone UVC/UVV (Germicidal /Oxidising) Lamp destroys the biological and chemical contaminants'.

The P900GX can be used continuously or when the need arises. Easily transported and includes a stand and carrying handle. The P900GX will purify up to 84 square meters and is ideal for anyone in need of a cost effective solution for those who work in offices, or, for those who do not have a forced air home system.

FEATURES

- Eradicates bacteria, viruses and mould
- Destroys chemical and biological odours
- Sanuvox's patented system in a Portable UV Air Purifier weighing 5 kg.
- High Intensity 19mm UVC/UVV Quartz Lamp
- 8,540 microwatts per/cm² of average UV intensity inside UV Reaction Chamber
- 9 electronically controlled speeds
- Touch-Pad Digital Controls with Count-Down Timer
- Most effective Air Purification System for those who do not have a forced air system
- Purify up to 84 square meters
- Easily wall mountable. Integral stand and handle included
- 3 year warranty on parts including UV Lamp
- CSA C/US Certified & CE Approved

IDEAL FOR

- Homes, apartments, waiting rooms, break rooms, classrooms, offices, boats & RV's, hotel rooms, fire restoration and any application that would require spot biological & chemical purification

ACCESSORIES

- All UVV Oxidizing Lamp (187nm) used in unoccupied spaces for concentrated chemical & odor applications. Applications include: fire restoration, car dealerships and detailing shops, real estate, garbage rooms, etc.



P900GX



P900GX CONTROL PANEL



TESTING

In a test conducted by McGill University and the Montreal Chest Institute research team on the efficacy of Ultraviolet Air Purification and published in Infection Control & Hospital Epidemiology (The University of Chicago Press), a portable ultraviolet unit (Sanuvox P900GX) was effective in reducing airborne viable bacteria (tuberculosis) by up to 95% percent and reduced bacterial concentrations at a rate equivalent to approximately 6 air changes per hour. To read the study in its entirety visit www.sanuvox.com/research

Technical Specifications on page 26-27

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MB500GX INSTALLED



MB500GX OPENED



MB500GX



MB500GX Ceiling Tile Mount UV Air Purifier

The MB500GX Recessed Ceiling Mount UV Air Purifier is an innovative design for office, school and institutional facilities. The MB500GX's space saving 609 x 609 mm self-contained design, easily installs in the opening of a suspended ceiling.

The MB500GX uses the Sanuvox patented process to move air parallel to the UV Lamp in a reflective Aluminium Reaction Chamber, and mix the purified air around the Lamp. The MB500GX will effectively destroy chemical and biological contaminants that effect the work place environment.

Extremely quiet and the ability to purify an area of up to 46.5 square meters (per unit), makes this air purifier the ideal solution for the problems associated with Sick Building Syndrome and doctor waiting rooms.



FEATURES

- Ideal for offices, break-rooms, doctor's offices, waiting rooms, schools, daycare centers, call centers, etc.
- Destroys biological contaminants such as mold, bacteria, viruses, germs, allergens
- Destroys chemicals & biological odors
- 10,000 microwatts per/cm² of UV intensity inside UV Reaction Chamber
- Patented 19mm Pure Fused Quartz UVC/UVV Lamp
- Aluminum Reaction Chamber maximizes UV intensity
- High-Output Ballast
- Patented Design & Sanuvox Quality
- Warranty: Lamp 12,000 hours. Unit 2 years
- CSA C/ US Certified & CE Approved

IDEAL FOR

- Ideal for offices, break-rooms, doctor's offices, waiting rooms, schools, daycare centers, etc..

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S300HFX HEPA



Door open to show pre-filter and HEPA filter

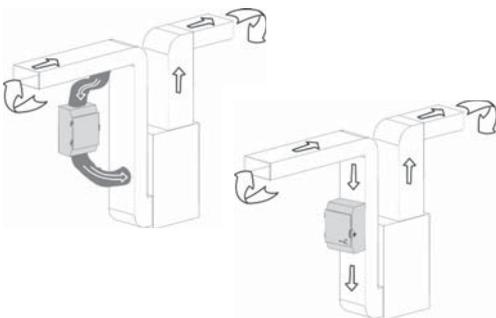
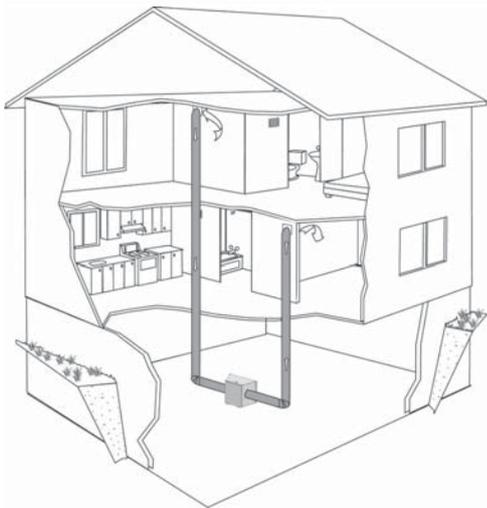
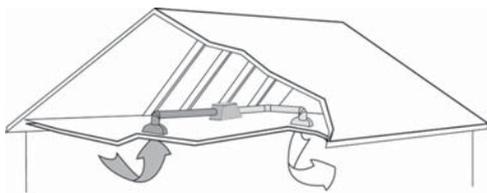
S300HFX HEPA Filter / UV System

The S300HFX is designed for applications that require filtration and purification. The included HEPA Filter is 99.97% effective, trapping particles down to 0.03 microns in size. Purification is done through Germicidal Photo-Oxidation. The air is pulled through the Aluminum UV Reaction Chamber where the air is made to pass parallel to the UV Lamp, bombarding it with UVC & UVV, destroying the biological & chemicals in the air. The air continues to pass through the pre-filter and finally the HEPA filter.

The 500 m3/H backward impeller blower is equipped with two speeds. Additional hardware is available for multiple rooms or stations. An optional vapour arm is available to capture contaminants in a lab, nail salon, etc.

By combining HEPA Filtration & UV Purification, Sanuvox is able to offer a complete IAQ solution in one unit.

S300HFX HEPA INSTALLATION



FEATURES

- 54 mm pre-filter & True 65 mm HEPA Filter captures particles down to 0.03 micron in size
- Destroys biological contaminants such as mold, bacteria, viruses, germs, allergens
- Destroys chemicals & biological odours
- By-pass System or Stand-Along
- 500 m3/H. 2 speed blower
- Patented 19mm High-Output Pure Fused Quartz UVC/UVV "J" Lamp
- Aluminium Reaction Chamber maximises UV intensity
- High-Output Ballast
- Patented Design & Sanuvox Quality
- 3 Year Warranty including UV Lamp
- CSA C/ US Certified & CE Approved

IDEAL FOR

- Residential, commercial & medical applications
- HVAC by-pass for whole system filtration / purification or Stand-alone wall mounting
- Home filtration / purification, smoking rooms, hotels, commercial buildings, laboratories, nail salons, doctor's office, hospital patient rooms, dentist offices, etc.

ACCESSORIES

- Stand Alone Option requires Louvers for inlet & outlet. Part# MSCLOU1 (sold in pairs)
- Pair of 8" Collars for ducting in & out. Part# MSCCOL1
- Round Inlet Adaptor mounting for three 4" inlets. Part# MSCOL2
- Fume Collector w/ table mount for applications such as nail salons and dentist office. Part# MSCCOL3
- VOC Kit includes (1) VOC Sensor, (1) Additional Ballast & (1) Additional 406 mm UVV (Oxidizing 187nm) Lamp. Part# SUBKITVOC5300

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STAND-ALONE AND OR DUCTED MODELS



S1000FX Filter / UV System

The S1000FX is a combination Ultraviolet - Filter Air Purifier. The S1000FX can be used in applications ranging from hospital clean room biological treatment, to smoking environments, to garbage room odour treatment.

In addition to the patented Sanuvox UV process, the S1000FX Clean Room option is equipped with two 762 mm UV "J" Lamps (one Germicidal UVC Lamp and one Germicidal / Oxidizing UVC / UVV Lamp) for complete biological and chemical protection. Up to four 762 mm UV "J" Lamps can be incorporated into the S1000FX.

The Clean Room option includes a 99.97% HEPA Filter, which will trap particles down to 0.03 microns (1 / 75000 of an inch) in size.

The S1000FX is equipped with a 3000-m³/H backward impeller blower and can be used as a stand alone system, or installed into the existing ventilation system as a by-pass installation.

S1000FX



FEATURES

- Destroys biological contaminants such as mould, bacteria, viruses, germs, allergens
- Destroys chemicals & biological odours
- Stand-Alone installation or can be ducted to multiple rooms
- (2) two 28 mm pre-filters & (1) one 108mm 95% ASHRAE pleated filter
- "Clean Room Option" includes HEPA Filter to capture particles down to 0.03 micron in size & additional UVC "J" Lamp
- 3000 m³/H. blower. Under load with filters, 1750 m³/H.
- Patented 762 mm x19mm Pure Fused Quartz UVC/UVV "J" Lamp
- Aluminium Reaction Chamber maximizes UV intensity
- High-Output Ballast
- Patented Design & Sanuvox Quality
- Warranty: Lamp 12,000 hours, Motor: 1 year, Ballast: 3 years
- CE Approved

IDEAL FOR

- Ideal for smoking rooms, garbage rooms, bars, restaurants, casinos, homeless shelters, odour control
- Clean Room Option: Clean rooms, operating theatres, hospitals, manufacturing, laboratories, etc.

ACCESSORIES

- Clean Room Option includes (1) 20" x 20" x 4" 99.97% true HEPA Filter, (1) Additional Ballast & (1) Additional 30" UVC Lamp (Germicidal 254nm). Part# SUBKITCROS1000
- VOC Kit includes (1) VOC Sensor, (1) Additional Ballast & (1) Additional 30" UVV (Oxidizing 187nm) Lamp. Part# SUBKITVOCs1000

S1000FX SMOKING ROOM INSTALLATION



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STAND-ALONE AND OR DUCTED MODELS

UV Bio-Wall PENTA Mobile Air & Surface Ultraviolet Steriliser

The PENTA UV Bio-Wall is a self contained fully mobile decontamination unit. Equipped with a pre-timer and operational timer, the PENTA will bask surfaces and air in unoccupied areas delivering incredible concentrations of UVC (254nm) Germicidal energy destroying microbial contaminants such as mould, bacteria & viruses.

UV BIO-WALL PENTA MOBILE



FEATURES

- Sterilizes air and surfaces in unoccupied areas
- Available in 1016mm, 1270 mm and 1524 mm Lamp lengths
- 2900 microwatts per/ cm² at 914 mm (1016 mm Lamp Lengths)
- 5 High Intensity Pure Fused Quartz Lamps
- Aluminium Anodized Parabolic Reflectors intensifies & maximizes 360° of UV Energy
- Stainless-steel removable base with castors
- High Output Electronic Rapid-Start Ballasts
- Pre-Timer (minutes) and Operation Timer (hours)
- Control Panel with Digital Lamp Life Timer, Digital LED Status & "Lamp Out" visual and audible alarm
- Easily transportable
- Aluminium Cover protects Lamps in storage and transport
- Patented UV System
- Sanuvoc Design & Quality

CONTROLS



IDEAL FOR

- Hospitals, clinics, laboratories, clean rooms, ICU's, burn centers, food processing, manufacturing, doctors offices, methadone clinics, operating rooms, homeless shelters, TB clinics, detention centers, kennels, dairy plants, sterile-rooms etc.

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SABER SMART



SABER APR



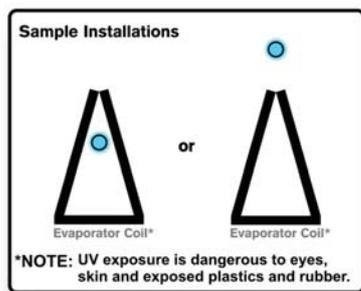
SABER 24V



GRAB-AND-GO PACKAGING



SABER ON COIL INSTALLATION



Saber SMART UV Object Purifier

The Sanuvox Saber SMART UV Purifier is designed to bask stationary objects (i.e. evaporator coil, duct walls) with UVC Germicidal Energy, preventing and destroying mould, biological odours and other microbial contaminants.

UV-C Germicidal Ultraviolet wavelength (254 nm) is effective in penetrating the cell membrane breaking the DNA structure of a microorganism, inhibiting reproduction.

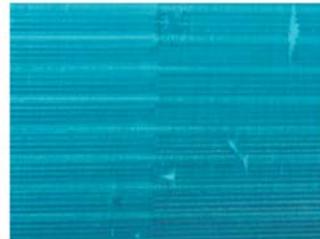
The Saber SMART includes a 76mm back-lit LCD display which provides Real-Time user information, including purifier status, days remaining until next Lamp change-out, intensity animation and Replace Lamp notifications.



Only the Saber SMART provides important user information & purifier status



A dirty coil impedes airflow losing efficiency making the system work harder increasing energy costs



A clean coil will maintain proper energy exchange and air-flow reducing the need for future cleaning while saving energy & maintenance costs

FEATURES

- 406 mm UV-C Lamp to destroy mold & other microbial growth including biological odours on the coil & surrounding area
- 76 mm LCD Display provides "Real Time" system status
 - Electro-Blue Back-Light Display
 - Countdown Display
 - Lamp Out Visual Alarm
 - Purifier Operational Animation
 - Visual Status Display
- Tested by Penn State University*
- Various mounting scenarios
- 110V Plug & Play
- Cotton Gloves included
- 1 year warranty including UV Lamp

* The Saber SMART has been tested by Penn State University and has shown to destroy 99% of spore forming B. Subtilis in less than two minutes at a distance of 304 mm

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COILCLEAN INSTALLED



COMMERCIAL UV CoilCleaners

The patent pending Sanuvox CoilClean purifiers are designed to prevent and destroy mould and other microbial contaminants from rooftops coils, fan coils, walk-in A/C coils and the air. High-Intensity 19mm Quartz UVC (254nm) Lamps and High-Output Electronic Ballasts paired with Anodised Aluminium Parabolic Reflectors make the CoilClean Series incredibly effective.

Anodised Aluminium Parabolic Reflectors are able to direct virtually all the UV Energy onto the coil or the air. Besides increasing UV exposure, the Reflector also protects plastics and wiring from destructive UV rays. How powerful would a flashlight or headlight be without a reflector? UV Light is no different. Reflection is needed to direct the UVC energy where needed most. Using any other UV Lamp/Emitter will result in losing more than half the UV Intensity.

- Destroys mould and other microbial growth on the "Object" as well as biological odours
- Improves energy savings & reduces maintenance by keeping the coil clean
- High-Intensity 19mm UVC Quartz Lamp
- Patent pending Anodised Parabolic Reflector reflects and directs UV Energy while protecting plastics from destructive UV Rays
- University tested & results published in The Lancet Medical Journal
- Higher UV intensity & reliability than other UV Lamp / Emitters
- 5X longer warranty than competing products
- Optional building automation, electronics and software (see bottom of page 27 for full description)
- More than twice the operating life compared to competing products
- Ideally installed on the return side of the coil, requiring little or no maintenance

TESTING



In a two year double blind study published in The Lancet Medical Journal sponsored by The Medical Research Council and The National Institute for Occupational Safety and Health (NIOSH), McGill University Researchers found Sanuvox UV CoilClean Purifiers to:

- **reduce microbial and endotoxin concentrations by 99%**
- **reduce respiratory symptoms by 40%**
- **reduce all symptoms by 20%**

Visit www.sanuvox.com/research

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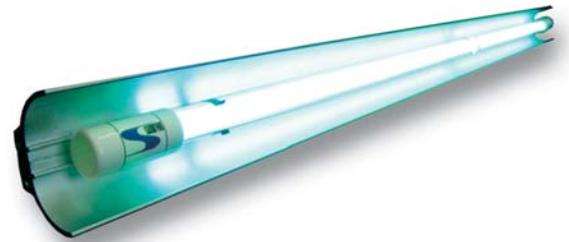
ULTRAVIOLET OBJECT PURIFIERS FOR MOLD & BACTERIA ON EVAPORATOR COILS

CoilClean IL

The CoilClean IL is designed to be installed facing the return side (or supply side) of a commercial evaporator coil or fancoil, destroying and preventing mold and other microbial growth.

The CoilClean In-Line (IL) are available in 12", 18", 24", 30", 40", 50" & 60" Lamp lengths. A combination of CoilClean IL's can be used to accommodate any size coil. Lamp Change-out: Replace Lamps after 17,000 hours of operation. Warranty is 12,000 hours from installation.

COILCLEAN IL



CoilClean RT

The Sanuvox CoilClean RT is an Ultraviolet Object Purifier specifically designed for exterior rooftop HVAC units. The CoilClean RT employs Patented Sanuvox Technology to keep the A/C coil free from biological contaminants including mould and fungus. The UV Purifier uses a weatherproof NEMA 4X Housing, a patent pending Reflector locking and alignment mechanism, a High Intensity 19mm Quartz Germicidal Lamp and an Aluminium Anodised Parabolic Reflector to direct the UV Energy that would otherwise be lost, ensuring a coil free from microbial growth. The CoilClean RT are available with 24", 30", & 40" Lamp lengths.

COILCLEAN RT



CoilClean B30X

The Sanuvox B30X UV Air Purifier / CoilCleaner is designed for easy after market installation on Bard Wall Mount HVAC Units (can be easily adapted for other manufacturers). The B30X UV Air Purifier / CoilCleaner uses UV-C (254nm) and UV-V (187nm) Energy to destroy biochemical contaminants such as mould, mildew, fungus spores, formaldehyde, solvents and secondhand smoke. The B30X will also irradiate viruses and bacteria such as legionella, tuberculosis, MS2 and meningitis to name a few.

COILCLEAN B30X



The patent pending Parabolic Reflector / Shield uses the full 360 degrees of UV Light to eradicate contaminants in the air and on the coil while protecting motor windings, plastics and people from UV exposure.

TESTING

	BEFORE	AFTER	IAQ-STK™ GUIDELINES
Total Fungal Elements	1,103	391	100 cts/m ³
Total Pollen	10	5	10 cts/m ³
Skin Cell Fragments	3,805	1,149	2,500 cts/m ³
Opaque Particles	108,207	18,621	50,000 cts/m ³

Independent Laboratory tests showed dramatic IAQ improvement after the Sanuvox CoilClean B30X Purifier was installed.

Source: Pure Air Control Services, Clearwater, FL



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SIZING SOFTWARE FOR UV COILCLEANERS (NO CHARGE)



Sanuvox UV CoilClean Sizing Matrix Software empowers installers and end-users with an easy to use application to size their very own coils.

The easy-to-use software provides detailed information for all related issues in regards to sizing UV systems for coils.

Information provided include:

- How many UV CoilClean fixtures required on the user specified coil.
- User selects preference of Upstream or Downstream side of the coil.
- Illustrated mounting guide shows where the UV fixtures should be placed for maximum efficiency.
- Real-Time UV efficiency and kill rate are provided at "end of Lamp Life" which is at 17 000 hours of operation.
- Real-Time Kill Rate in minutes based on the resilient bacterial spore aspergillus Niger.

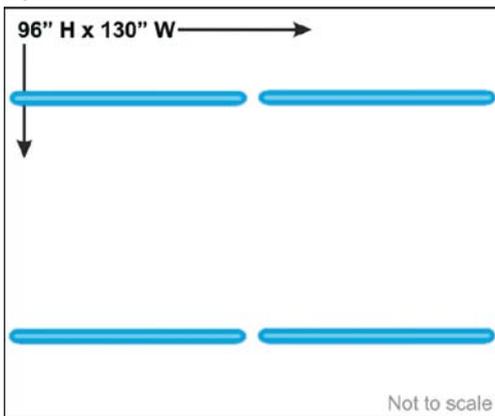
The Sanuvox Aluminum Parabolic Reflector* directs virtually 100% of the germicidal UV energy produced onto the coil reducing the number of UV fixtures required, while dramatically extending effective Lamp life.

*patent pending

EXAMPLES OF WHAT IS INCLUDED IN THE SIZING MATRIX

In this example, the UV CoilClean Sizing Matrix bases all calculations on an Upstream (return side) installation on a coil measuring 3302 mm wide by 2438 mm high. The following information is generated by the Matrix and provided in a user-friendly PDF report.

Figure A. Position of UV CoilClean ILs on the coil

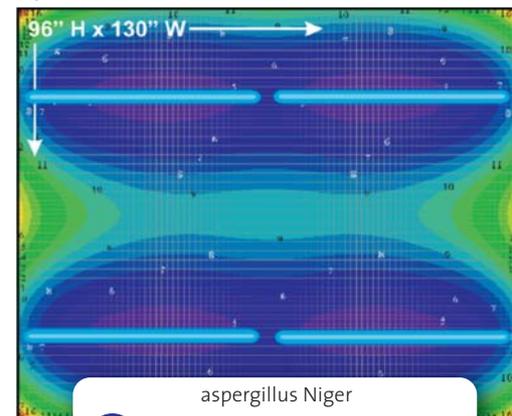


This Coil requires two (2) rows of two (2) CoilClean IL 60" per row

Figure B. Measured UV intensity on the coil @ 457 mm



Figure C. Bio-contaminant survival time on the coil



aspergillus Niger

- 5 min. to 99+% sterilization
- 11 min. to 99+% sterilization
- 16 min. to 99+% sterilization
- 20 min. to 99+% sterilization

The included Kill-Rates are based on "end of Lamp life" which is after 2 years of continuous operation (17 000 hours). Kill Rates from "Day 1" will be exponentially higher.

Aspergillus Niger will take 5 minutes (purple area) of irradiation for 99+% destruction. The 4 corners will be receiving the least amount of UV intensity (approx. 550 microwatts as per Figure B.) requiring not more than 20 minutes for 99+% destruction. The average time across the coil for 99+% destruction will be 8 minutes.



Available at no-charge. Real-Time Sizing Software. Call 0845 116 78 78 for your copy today.

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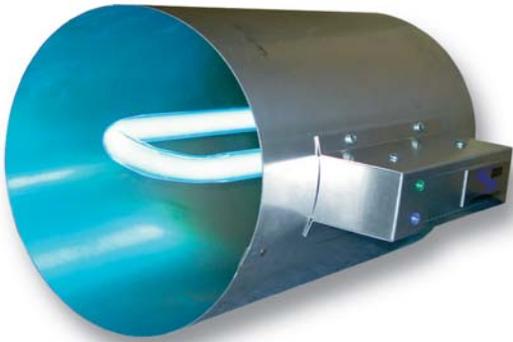
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SPECIALTY ULTRAVIOLET PRODUCTS

HRV



HRV ultraviolet Air Purifier

The HRV UV Air Purifier is specifically designed to be connected to the “fresh air to inside duct” of an HRV / ERV unit. With a powerful proprietary UV-C / UV-V (Germicidal / Oxidising) Lamp, the HRV Purifier uses the patented Sanuvox process to destroy the biological and chemical contaminants as well as odours which would have otherwise been distributed throughout the ventilation system. The HRV UV Purifier is available in both 152 mm & 203 mm diameters.

Commercial Odour & Chemical Exhaust Option

For applications where exhausted air may have high levels of chemical and/or odours and need to be treated. The HRV can be fitted with a UVV ONLY (187nm) Lamp to oxidise the chemical contaminants as they are exhausted outside. Applications include: **waste water processing, restaurants, hospitals, animal farms, manufacturing facilities, etc.**

*Multiple HRV units can work in series for any size exhaust. Custom applications available.

Outside Dimensions: HRV 6	304 mm high x 152 mm wide
Outside Dimensions: HRV 8	304 mm high x 203 mm wide
Weight:	1.36 kg.
Power Requirements: HRV 6	120V / 230V 15 watts
Power Requirements: HRV 8	120V / 230V 25 watts
Installation:	Hardwired to HRV / ERV
UV Lamp Dimensions: HRV 6	J type (Proprietary) Ultraviolet Dual Zone Lamp 19 mm Dia. Length 165 mm Arc length 266 mm
UV Lamp Dimensions: HRV 8	Length 165 mm. Arc length 450 mm
UV Aluminum Reflector Tube: HRV 6	152 mm Dia. x 304 mm Long Aluminum Reflective Tube
UV Aluminum Reflector Tube: HRV 8	203 mm Dia. x 304 mm Long Aluminum Reflective Tube
Certifications:	CSA C/US, CE
Warranty:	3 years including Lamp



CMU



CMU Ceiling Mount UV Air Purifier

The CMU-18 & CMU-24 mount in the return plenum filter box just before the filter. The proprietary UV-C / UV-V (Germicidal / Oxidising) Lamp is housed in an Aluminium Reflecting Box which intensifies the UV energy. The CMU destroys biological and chemical contaminants that travel throughout the system. Equipped with a Safety Cut-Off switch that disconnects power when filter is removed. The CMU-18 is for use in a plenum filter box with a return duct up to 457 mm diameter and the CMU-24 is for a filter box between 508 and 609 mm diameter. Filter box is field supplied.

Dimensions:	495 x 425 x 120 mm
Minimum Filter Box Size Required:	508 x 508 x 152 mm
Weight:	2.72 kg
Power Requirements:	120V / 230V 15 watts
UV Lamp Dimensions CMU-18:	J type (Proprietary) Ultraviolet Lamp Dia.19 mm. Length 165 mm
Lamp Arc Length:	267 mm
UV Lamp Dimensions CMU-24:	J type (Proprietary) Ultraviolet Lamp Dia.19 mm. Length 267 mm
Lamp Arc Length:	449 mm
UV Reflector:	Aluminum Reflective Box
Airflow	Depends on Air Handler
Installation:	Ceiling Filter Box Lay-In
Certification:	CSA C/US, CE
Warranty:	3 years including Lamp



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TECHNOLOGY EVALUATION REPORT

Biological Inactivation Efficiency by HVAC In-Duct Ultraviolet Light Systems

Sanuvox Technologies Inc. UV Bio-Wall 50 Outwardly Projecting Air Purifier

Office of Research and Development
National Homeland Security
Research Center

Notice

The U.S. Environmental Protection Agency (EPA), through its Office of Research and Development's National Homeland Security Research Center (NHSRC), funded and managed this technology evaluation through a Blanket Purchase Agreement (BPA) under General Services Administration contract number GS23F0011L-3 with Battelle, with RTI under subcontract to Battelle. This report has been peer and administratively reviewed and has been approved for publication as an EPA document.

Executive Summary

The U.S. Environmental Protection Agency's (EPA's) National Homeland Security Research Center (NHSRC) Technology Testing and Evaluation Program (TTEP) is helping to protect human health and the environment from adverse impacts resulting from acts of terror by carrying out performance tests on homeland security technologies. Under TTEP, RTI recently evaluated the performance of the Sanuvox Technologies Inc. UV Bio-Wall Outwardly Projecting Air Purifier. The objective of testing the device was to evaluate its bioaerosol inactivation efficiency as a heating, ventilation and air-conditioning (HVAC) in-duct ultraviolet light system.

The product was tested using a test plan approved by EPA, *Test/QA Plan for Biological Inactivation Efficiency by HVAC In-Duct Ultraviolet Light Air Cleaners*.



Figure 2-1. Ballast box installed on the outside of the test rig.



Figure 2-2. Device installed inside the test rig. There are 5 lamps. A reflective surface was placed in the duct.

(1) The tests were conducted using three organisms, two bacteria *Bacillus atrophaeus* (surrogate for anthrax spore) and *Serratia marcescens* and one bacterial virus (MS2). These organisms were selected because their sizes, shapes and susceptibility to UV inactivation make them reasonable surrogates for biological warfare agents (BWAs). Generally, vegetative bacteria are readily killed and bacterial spores are more difficult. To model use in an HVAC system, RTI used a test duct designed for testing filtration and inactivation efficiencies of aerosol, bioaerosol, and chemical challenges.

The bioaerosol inactivation efficiencies calculated for the three organisms were 93% on *one pass* for *B. atrophaeus* (surrogate for anthrax spore), >99.97% *on one pass* for *S. marcescens* (bacteria) and 99% *on one pass* for MS2 (bacterial virus). The irradiance was measured as 1200 $\mu\text{W}/\text{cm}^2$ at 133 cm (52.4 in.) upstream from the closest glass part of the lamps with an airflow of 0.93 m^3/sec (1970 cfm). The system had five lamps that were burned in for 100 hours prior to measurements.

* *One pass inactivation with no re-circulation by the UV System.*

This is an executive summary of the Official EPA Report. Visit the following link to read the report in its entirety: <http://www.epa.gov/nhsrc/pubs/erUVSanuvox062606.pdf>

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What is it you want to treat? The AIR or the A/C COIL?

Sanuvox divides the commercial line into two categories: a) **UV OBJECT PURIFICATION** and b) **UV AIR PURIFICATION**.

Sanuvox UV Object Purifiers named appropriately the "CoilClean series", are High-Intensity or Amalgam 19mm UVC (Germicidal 254nm) Mercury Vapour Quartz Lamps mounted to Anodised Aluminium Parabolic Reflectors. These systems are designed to bask stationary Objects (usually an A/C COIL) with UVC light preventing and destroying mold and other microbial growth on the object. Although very effective in keeping a stationary object clean, UV Lamps shining on an object will have little effect on any other Indoor Air Quality (IAQ) concerns outside of a mouldladen coil. UV CoilCleaners will have little effect on the air duct. By treating the air in the duct with UV Air Purifiers (see UV Air Purifiers) they will also keep the coil clean by reducing the biological contaminants in the air.

Sanuvox UV Air Purifiers are specially designed to drastically improve the air quality in the building or facility. Sanuvox proprietary systems make it possible to deliver high amounts of UV energy to the air-stream while increasing "dwell time" between the air and the UV purifier.

Sanuvox UV Air Purifiers use proprietary Dual Zone High-Intensity or High-Intensity Amalgam 19mm UVC (Germicidal 254nm) UVV (Oxidation 187nm) Mercury Vapor Quartz Lamps to destroy biological and chemicals in the air.

How does ultraviolet light destroy biological & chemical contaminants?

Sanuvox purifiers use proprietary High-Intensity or Amalgam 19mm Mercury Vapour Hot Cathode Quartz Lamps that produces UVC and UVV light (both wavelengths are fused into the Lamp). UVC is short-wave radiation; it attacks the DNA of the cell. This wavelength's primary uses are for the destruction of biological contaminants such as mould, bacteria and viruses. The Centers for Disease Control (CDC) recommends this method for destroying viruses such as tuberculosis. UVV is primarily used for oxidization; this is the portion of the lamp that will destroy chemicals and odours such as cigarette smoke, VOCs, diesel fumes, formaldehyde, amongst others. With both UV wavelengths working together, Sanuvox UV Air Purifiers are able to destroy thousands of biological and chemical contaminants.

How do I select the right Sanuvox UV Purifier for the job?

If you have questions, or an application you want us to help you with, please do not hesitate to contact Sanuvox at 0845 116 78 78 or 0141 554 2327. Let our engineers and experts do the selection and sizing with you. Our goal is to support you guaranteeing your customer's needs are met.

How is Sanuvox Technologies different than other UV Purifier Manufacturers?

Established in 1995, Sanuvox has received multiple U.S. and Canadian patents on the UV process that is being heralded as the standard in the industry. Unlike manufacturers that market conventional Object Purifiers, Sanuvox offers Engineered Systems for both Object & Air for virtually any IAQ application. Sanuvox factory support is unmatched. We will provide you with the support needed in order to solve your customer's IAQ needs. Sanuvox Purifiers are used in tens of thousands of applications ranging from private, commercial and medical, to government and military installations.

Visit www.sanuvox.com/applications to see a partial list of who uses Sanuvox UV Systems.

What types of systems does Sanuvox manufacture?

Sanuvox manufactures a complete line of residential, commercial and industrial UV systems, including In-Duct Ultraviolet Air Purifiers, UV CoilCleaners, UV stand-alone systems as well as combination HEPA UV Filter / Air Purifiers.

Do Sanuvox Ultraviolet Air Purifiers produce ozone?

As part of the proprietary Sanuvox process involved in UV air treatment, the UVV (187nm) portion of the Lamp is fused to the UVC (254nm) portion of the glass. Sanuvox Lamps are not ozone generators; ozone is a byproduct of oxidation. As the oxidation is emitted from the UVV portion of the Lamp, the UVC wavelength immediately starts to break down residual ozone that may be present. Sanuvox is treating the chemical contaminants in the air at that moment in time; this is one of the components of the Sanuvox patent.

The amount of residual ozone produced by a Sanuvox UV Air Purifier with the UVC/UVV Lamp has been measured by independent accredited testing laboratories and found not to exceed 0.0035 parts per million at the outlet of the purifier, which can be less than the ozone level outside. This is less than 1/10 of the ASHRAE limit (0.05 ppm) and less than 1/20th of the OSHA (0.10 ppm) standards for safe ozone levels. In fact, the oxidation process produces less residual ozone than a photocopier or the arcing from an electronic air cleaner, and in documented air quality tests, zero ozone levels have been found in the living or working area.

*All Sanuvox systems are available with UVC Germicidal Lamps (no UVV) upon request at no additional charge.



UV Object Cleaner



UV Air Purifier

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How can Sanuvox Air Purifiers destroy up to 99.999% of the contaminants traveling through the HVAC system?

Sanuvox UV Air Purifiers are sized according to the application. Taking into account the duct size, air velocity, % of fresh air and the contaminant(s) to be destroyed, Sanuvox can size the application in order to achieve up to 99.999% destruction on one pass. Need help sizing? Just call 0845 116 78 78 or 0141 554 2327.

What is a URV rating and how does it relate to Ultraviolet Air Purification?



Ultraviolet Rating Value (URV) is a proposed standard by the International Ultraviolet Association (IUVA) in response to an industry-wide need for standards and guidelines for evaluating Ultraviolet Air Purification efficiencies. On the adjacent page you will note a URV value on select Sanuvox Ultraviolet Air Purifiers. For example: A URV rating of 14 and greater represents 100% destruction on tuberculosis. A URV rating of 11 represents 88% destruction on tuberculosis. A URV rating of 10 represents 41% destruction on tuberculosis.

See opposite page Table 1: URV Rating Values & Typical Kill Rates.



How are Sanuvox UV CoilCleaners different than other UV Lamps / Emitters used to destroy mold on an A/C coil?

All Sanuvox Ultraviolet Lamps use the highest efficiency Quartz glass (highest quality glass with the least amount of impurities). Sanuvox patented Hot Cathode High-Intensity or Amalgam Mercury Vapour 19mm Lamps produce the highest efficiency, cleanest burning Lamp available, paired to high-output electronic ballasts.

Only Sanuvox UV CoilCleaners use patent pending Anodized Aluminum Parabolic Reflectors to direct the UVC Germicidal (254nm) light onto the Object. If a UV Lamp is shining on an Object without a Parabolic Reflector, less than 40% of the Lamp's energy is actually shining on the Object. With the addition of the Parabolic Reflector, Sanuvox is directing virtually all of the Lamps energy where it is needed.

Can a UV Lamp on a Coil also treat the air-stream?

Because UV Lamps on a coil are installed perpendicular to the air, there is not sufficient amount of "Dwell Time" between the Lamp and the air-stream, consequently the effect on the air is much less than a parallel installation. For a UV Lamp to be effective as an air purifier, the Lamp(s) must be parallel to the air-stream. If Lamps are to be installed perpendicular, many more Lamps would be required in order to achieve the necessary "Dwell Time".

Are there research studies done on Sanuvox UV Systems?

The Sanuvox Research & Design Team is made up of Scientists, PhD's, Engineers, and experts in Air Quality and Air Management. All research studies done on Sanuvox Systems are Independent Third Party, using various Sanuvox UV Purifiers, some of these studies have been published in various medical journals including the prestigious Lancet Medical Journal and Infection Control & Hospital Epidemiology. In 2006, The EPA (Environmental Protection Agency) and The NHRSC (U.S. National Homeland Security Research Center) tested the Sanuvox UV Bio-Wall on Biological Warfare Agents. The UV Bio-Wall achieved >99.97% destruction on bio-warfare agents on one pass. Many UV manufacturers site Sanuvox research to show the efficacy of UV Treatment.

Visit www.sanuvox.com/research to view the studies.



Is a Sanuvox UV Purifier safe?

Sanuvox Air Purifier are CSA C/US certified and CE approved. Two factors relating to safety are: (1) exposure to UV rays is damaging to the eyes and skin and (2) direct UV exposure destroys plastic.

What are the applications and uses for Sanuvox UV Purifiers?

Sanuvox Air Purifiers will destroy biological and chemical contaminants, odours such as bacteria, viruses, mould, mildew, smoke, formaldehyde, cleaning solvents, etc. See page 25 for a partial list of contaminants treated by Sanuvox.

Sanuvox Purifiers are used in tens of thousands of homes, doctors and dentists' offices, hospitals, veterinary clinics, office buildings, government facilities, railway stations, health clubs, yoga studios, day care centers, laboratories, class rooms, old age homes, hotels, smoking rooms, bars and restaurants, mausoleums, funeral parlors and morgues.

What is my Sanuvox CoilClean warranty?

All Sanuvox UV CoilCleaners are warranted for 5 years (including ballast); the UV Lamp is warranted for 12,000 hours.

What is my Sanuvox UV Air Purifier warranty?

Please refer to www.sanuvox.com for the specific warranty on the Sanuvox product that interests you. All commercial UV Lamps are warranted for 12,000 hours.

COMPETITIVE COMPARISON

	SANUVOX	LEADING COMPETITOR
Lamp Change-Out	17,000 hrs.	8,000 hrs.
Lamp Warranty	12,000 hrs.	2,160 hrs.
Fixture	5 Years	1 Year

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COMMON BIOLOGICAL & CHEMICAL CONTAMINANTS

Listed are some common odors, chemical pollutants and biological contaminants that are destroyed using a Sanuvox Ultraviolet Air Purification System.

Acetone	Decaying Substances	Lactic Acid	Poultry Odours
Alcoholic Beverages	Deodorants	Liquor Odours	Rubber
Animal Hairs	Diesel Fumes	Masking Agents	Sewer Odours
Animal Odours	Embalming Odours	Methyl Alcohol	Smoke
Anesthetics	Ethyl Alcohol	Mildew	Spoiled Food
Fumes Automobile	Eucalyptol	Mould	Tar
Exhaust Bacteria	Exhaust Fumes	Nail Polish	Tarnishing Gases
Bathroom Odours	Fabric Finishes	Naphtha (Coal tar)	Tobacco Smoke
Body Odours	Fecal Odours	Naphtha (Petroleum)	Turpentine
Burned Flesh	Fertiliser	Nicotine	Vapours
Burned Food	Film Processing Odours	Noxious Gases Organic	Varnish Fumes
Charred Materials	Fish	Chemicals Packing	Vinegar
Cheese Kitchen	Formaldehyde	House Odours Paint	Viruses
Cigarette Smoke	Fuel Gases	Paste & Glue Perfumes,	Volatile Materials
Coal Smoke	Garlic	Cosmetics Perspiration	Waste Products
Combustion	Petrol and Diesel	Pet Odours	Xylene
Odours Cooking	Hair Spray	Plastics	
Odours Creosote	Industrial Wastes	Kerosene	

Common Microorganisms

Bacteria	Viruses	Dysentery bacilli	S. tyhimurium
Protozoa	Tuberculosis bacilli	Mould Spores	Staphylococcus aureus
Measles	Influenza	Lengioncellosis	H1N1 (Bird and Swine)
S. enteritidis	B. paratyphosus	Bacillus anthracis	
Eberthella typhosa	Escherichia coli	B. subtilis	
Meisseria catarrahalisis	Proteus vulgaris	Micrococcus candidus	

Table 1: URV Rating Values & Typical Kill Rates

URV	Dose $\mu\text{W}\cdot\text{s}/\text{cm}^2$	Anthrax Kill, %	Influenza Kill, %	Smallpox Kill, %	TB Kill, %
1	1	0	0	0	0
2	10	0	1	2	2
3	20	0	2	3	4
4	30	0	3	4	6
5	50	1	6	7	10
6	75	1	9	11	15
7	100	2	11	14	19
8	150	2	16	20	27
9	250	4	26	32	41
10	500	8	45	53	66
11	1000	15	69	78	88
12	1500	22	83	90	96
13	2000	28	91	95	99
14	3000	39	97	99	100
15	4000	49	99	100	100
16	5000	57	100	100	100
17	6000	63	100	100	100
18	8000	74	100	100	100
19	10000	81	100	100	100
20	20000	96	100	100	100
$k, \text{cm}^2/\mu\text{W}\cdot\text{s}$		0.000167	0.001187	0.001528	0.002132

MB500GX:
URV Rating 19 at 119 M3/H



P900GX:
URV Rating 19 at 119 M3/H



S300HFX:
URV Rating 19 at 509 M3/H



UV Bio-Wall QUATTRO:
URV Rating 14 at 4,247 M3/H through the entire duct



UV Bio-Wall 60":
URV Rating 19 at 16,990 M3/H through the entire duct



S1000FX:
URV Rating 16 at 1,699 M3/H Room Option



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SPECIFICATIONS

	R1700GX	R4000XB	R4000GX
Purifying Capacity	158 sq m	371.6 sq m	371.6 sq m
Outside Dimensions (mm)	241x196x304 mm	342x203x304 mm	342x203x304 mm
Weight (Kg)	2.04	3.62	3.62
Power	110/220 v 50-60 Hz	110/220 v 50-60 Hz	110/220 v 50-60 Hz
Watts/amperage	27w/730ma	37w/650ma	37w/650ma
Starting	Hardwire to Air Handler	Hardwire to Air Handler	Air Pressure Sensor
Line Cord	No	No	Yes
UV Lamp type	Proprietary High Intensity 19mm Mercury Vapor Quartz	Proprietary High Intensity 19mm Mercury Vapor Quartz	Proprietary High Intensity 19mm Mercury Vapor Quartz
UV Wavelength	UVC 254nm / UVV 187nm	UVC 254nm / UVV 187nm	UVC 254nm / UVV 187nm
UV Lamp Configuration	J Shaped	J Shaped	J Shaped
UV Lamp length (mm)	165mm	266 mm	266 mm
UV arc length (in)	266 mm	449 mm	449 mm
Internal Lumina Lamp coating to prevent solarization	Yes	Yes	Yes
Reaction Chamber	152 mm Aluminumsq.tube	152 mm Aluminum sq.tube	152 mm Aluminumsq.tube
Average Microwatt intensity inside Reaction Chamber	10,212	16,479	16,479
Lamp Change Out Time	3 Years	3 Years	3 Years
Lamp Warranty	3 Years	3 Years	3 Years
Purifier Warranty	3 Years	3 Years	3 Years
Construction	Steel/Powder Coat Paint	Steel/Powder Coat Paint	Steel/Powder Coat Paint

	UV Bio-Wall QUATTRO	UV Bio-Wall (46 / 61 / 76 / 102 / 127 / 152 cm)	UV Bio-Wall PENTA
Purifying Capacity	Sized according to application	Sized according to application	Air & Surface Sterilizer. Depends on area
Dimensions (mm)	609x203. Lamp assembly can extend up to 381 from back-plate	Diameter: 311 mm Overall length is Lamp length + 165 mm	1193x711 mm
Weight (Kg)	12.7 Kg.	Depending on model. Bio60: 5 Kg.	13.6 Kg
Power	110/220 v 50-60 Hz	110 or 220 v 50-60 Hz	110 or 220 v 50-60 Hz
Watts/amperage total	170 watts. 2.5A	According to model Up to 750 Watts. 7.5A	500 Watts. 5A
Starting	Air Pressure Sensor	Hardwire to Air Handler	Pre-Timer. Operational Timer
Line Cord	Yes	No	Yes
UV Lamp type	Proprietary High Intensity 19mm Mercury Vapour Quartz	Proprietary High Intensity 19mm Mercury Vapor Quartz	Proprietary High Intensity 19mm Mercury Vapor Quartz
UV Wavelength Nanometers (nm)	UVC 254nm / UVV 187nm	UVC 254nm / UVV 187nm	UVC 254nm
UV Lamp Configuration	(4) x Straight	(5) x Straight	(5) x Straight
UV Lamp length (mm)	457 mm	46, 61, 76, 102, 127, 152 cm available	102, 127, 152 cm
Internal Lumina Lamp coating to prevent solarization	Yes	Yes	Yes
Reflector	Anodised Aluminium Parabolic Reflectors	Anodised Aluminium Parabolic Reflectors	Anodised Aluminium Parabolic Reflectors
Average Microwatt intensity at 914 mm	1,600 µw	Up to 3300µw depending on Bio-Wall Purifier	2000 µw
Lamp Change Out Time	17000 hours	17000 Hours	17000 Hours
Lamp Warranty	12000 hours	12000 Hours	12000 Hours
Purifier Warranty	3 Years Ballast. 5 years other	5 Years Ballast. 5 years other	3 Years Ballast. 5 years other
Construction	Steel/Powder Coat Paint	Aluminium/Steel	Aluminium/StainlessSteel
Options	Ultra-High Intensity Amalgam Lamps.	277 v option available Ultra-High Intensity Amalgam Lamps.	277 v option available Ultra-High Intensity Amalgam Lamps.
Software	N/A	Proprietary electronics & software to monitor each purifier via building computer maintenance.	N/A

	P900GX Portable
Purifying Capacity	83.6 sq m
Outside Dimensions	78x295x476
Weight (Kg)	5 kg
Air Inlet	178x63 mm
Air Outlet	190x82.5 mm
Power	120 / 230 v. 33 Watts
Airflow Under-Load	Variable speed: 60-130 m3/H
Filter Type	Permanent Aluminium Mesh
UV Lamp type	Proprietary 19mm Mercury Vapor Quartz
UV Wavelength	UVC 254nm / UVV 187nm
UV Lamp Configuration	J Shaped
UV Lamp length (mm)	165 mm
UV arc length (mm)	268 mm
Internal Lumina Lamp coating to prevent solarization	Yes
Aluminium Reaction Chamber	Aluminum Reflector Box
Average Microwatt intensity inside aluminum reactor chamber	8,540
Lamp Change Out Time	3 years
Lamp Warranty	3 years
Purifier Warranty	3 Years Ballast. 1 year Motor
Construction	Steel/Powder Coat Paint
Stand	Built-In

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SPECIFICATIONS

	S1000FX	S300HFX	MB500X
Purifying Capacity	Sized according to application	Sized according to application	500 sq ft per purifier
Outside Dimensions (in)	20x20x41 inches	17x31x13 inches	23.5 x 23.5 x 9 inches
Weight (lbs)	59 lbs	33 lbs	28 lbs
Air Inlets	2 x 8 inches	8" round on top or 3"x16" in back	Louvers
Air Outlets	2 x 8 inches	8" round on bottom or 3"x16" in back	Louvers
Power	120 v with plug, 360 Watts, 60 Hz	120 v with plug, 200 Watts, 60 Hz	110 v, 26 Watts hardware
Airflow - Free	1750 cfm	Two speed 200/300 cfm	
Airflow Under-Load	1000 CFM+	151 cfm/218 cfm	85 cfm
Safety Auto Cut-Off	Yes	Yes	Yes
Filter Type	(2) 1" pre-filters, (1) 4" 95 ASHRAE or (1) 4" true HEPA	(1) pre-filter, (1) true HEPA	Polypropylene inlet filter
UV Lamp type	Proprietary 19mm Mercury Vapor Quartz	Proprietary High Intensity 19mm Mercury Vapor Quartz	Proprietary 19mm Mercury Vapor Quartz
UV Wavelength	UVC 254nm / UVV 187nm	UVC 254nm / UVV 187nm	UVC 254nm / UVV 187nm
UV Lamp Configuration	J Shaped	J Shaped	J Shaped
UV Lamp length (in)	16 inches	10.5 inches	6.5 inches
UV arc length (in)	30 inches	17.7 inches	10.5 inches
Internal Lumina Lamp coating to prevent solarization	Yes	Yes	Yes
Reaction Chamber	16x16 Aluminum Box	Aluminum Reflector Box	Aluminum Reflector Box
Average Microwatt intensity inside aluminum reflector	8,740	16,479	10,007
Lamp Change Out Time	17000 Hours	17000 Hours	17000 Hours
Lamp Warranty	12000 Hours	12000 Hours	12000 Hours
Purifier Warranty	3 Years Ballast. 5 years other	3 Years Ballast. 5 years other	3 Years Ballast. 5 years other
Construction	Steel/Powder Coat Paint	Steel/Powder Coat Paint	Steel/Powder Coat Paint
Installation	Stand-Alone or Ducted	Stand-Alone or Ducted	Recessed Ceiling Lay-In
Options	VOC option, Clean Room option	Louvers, Fume Collector, Inlet Cap	110 cfm fan

	CoilClean IL (12"/18"/24"/30"/40"/50"/60")	CoilClean RT (24"/30"/40")
Purifying Capacity	Sized according to Coil size	Sized according to Coil size
Dimensions (in)	Reflector Height: 2.5" Reflector Depth: 1.26" Reflector Length up to 61.5" depending on IL model	NEMA 4X enclosure: 8x8x4 Reflector Height: 2.5" Reflector Depth: 1.26" Reflector Length up to 41.5" depending on RT model
Weight (lbs)	2.5 -14 lbs. depending on IL model	RT24: 12 lbs. RT30: 12.5 lbs. RT40: 13 lbs.
Power	110/220 v 50-60 Hz	120 v/220 v (120v available) 50-60 Hz
Watts/amperage	420 ma – 1060 ma. Up to 150 Watts depending on IL model	Up to 100 Watts, 1A
Starting	Hardwire to Air Handler	Hardwire to Air Handler
Line Cord	No	No
UV Lamp type	Proprietary High Intensity 19mm Mercury Vapor Quartz	Proprietary High Intensity 19mm Mercury Vapor Quartz
UV Wavelength	UVC 254nm	UVC 254nm
UV Lamp Configuration	Straight	Straight
UV Lamp length (in)	12"/18"/24"/30"/40"/50"/60"	24", 30", 40" available
Internal Lumina Lamp coating to prevent solarization	Yes	Yes
Reflector	Anodized Aluminum Parabolic Reflector	Anodized Aluminum Parabolic Reflector
Average Microwatt intensity at 36"	Example: IL 60 400µw at 1 meter. Microwatts will vary depending on Lamp length	
Lamp Change Out Time	17000 hours	17000 Hours
Lamp Warranty	12000 hours	12000 Hours
Purifier Warranty	3 Years Ballast. 5 years other	3 Years Ballast. 5 years other
Construction	Aluminum/Steel	Aluminum/Steel
Certifications	CSA C/US, CE	CSA C/US, CE
Options	Proprietary electronics & software to monitor each purifier via building computer maintenance	Proprietary electronics & software to monitor each purifier via building computer maintenance

Remote Computer Monitoring Software

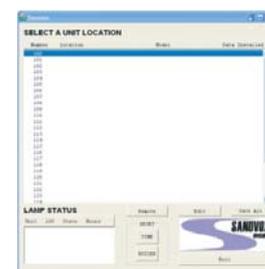
The Building Software included with the UV Bio-Wall Series and available on the CoilClean Series is electronics and software that has been specifically designed by Sanuvox to monitor each UV Bio-Wall and CoilClean fixture for Lamp Operating Hours and Lamp-Out condition.

The program will accumulate hours of operation for each Lamp. When the accumulated time reaches a predetermined set time (hours of operation), the system will issue a "Caution" stating that the Lamps will have to be replaced within 1,000 operating hours. This "Caution" will be repeated every 100 hours of operation.

When the 1,000 hours has been reached, the system will issue a "Warning" stating that the Lamps have reached the end of their operating life and must be replaced. This "Warning" will be repeated every 8 hours. After replacing the Lamps the time accumulation can be reset to zero.

The software has built in alarms that will alert the user should a Lamp or Ballast fail. Upon replacing a failed Lamp, the user has the ability to reset the time accumulation (hours of operation) to zero.

The software will keep track of each time the Lamp is replaced in a history file.



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