

Listed below are some **common odors, chemical pollutants and biological contaminants** that are destroyed by the Sanuvox Ultraviolet Air Purifier.

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

### Common Micro-organisms

- |                    |                       |                   |                       |
|--------------------|-----------------------|-------------------|-----------------------|
| Bacteria           | Meisseria catarrhalis | Escherichia coli  | Bacillus anthracis    |
| Protozoa           | Viruses               | Proteus vulgaris  | B. subtilis           |
| Measles            | Tuberculosis bacilli  | Dysentery bacilli | Micrococcus candidus  |
| S. enteritidis     | Influenza             | Mold Spores       | S. tyhimurium         |
| Eberthella typhosa | B. paratyphosus       | Lengioncellosis   | Staphylococcus aureus |

Table 1: URV Rating Values & Typical Kill Rates

URV	Dose μW-s/cm <sup>2</sup>	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, cm <sup>2</sup> /μW-s		0.000167	0.001187	0.001528	0.002132

Ref: IUVA-2005



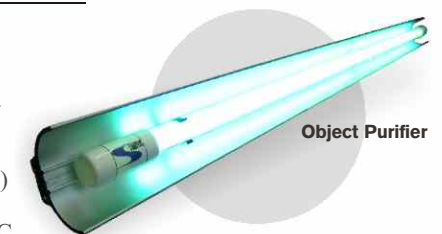
514-382-5823 | 1-888-SANUVOX | www.sanuvox.com | info@sanuvox.com

### 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 Vapor Quartz Lamps mounted to Anodized Aluminum Parabolic Reflectors designed to bask stationary Objects (usually an A/C COIL) with UVC light preventing and destroying mold and other



Object Purifier

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 moldy coil.

**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 causing increased 'dwell time' between the air and the UV purifier.

Sanuvox UV Air Purifiers use proprietary Dual Zone High-Intensity or 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 Vapor 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 mold, 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 odors such as cigarette smoke, VOCs, diesel fumes and formaldehyde. With both UV wavelengths working together, Sanuvox UV Air Purifiers are able to destroy thousands of biological and chemical contaminants.



Air Purifier

### 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 1-888-SANUVOX (726-8869) or 514-382-5823. Let our engineers and experts do the selection and sizing with you. Our goal is to support you in anyway we can to guarantee your customer's needs are met.

### How is Sanuvox Technologies different than other UV Lamp Manufacturers?

Established in 1995, Sanuvox has received multiple U.S. patents on the UV process that is being heralded as the standard in the industry. Unlike Lamp 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.htm](http://www.sanuvox.com/applications.htm) to see a partial list of who uses Sanuvox UV Systems.

### What kind of systems does Sanuvox manufacture?

Sanuvox manufactures a complete line of In-Duct Ultraviolet Air Purifiers, UV CoilCleaners, UV stand-alone systems as well as combination HEPA UV Filter / Air Purifiers. Sanuvox also manufactures systems for residential applications.

### 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 U.S. 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. 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.

- OFFICES
  - SCHOOLS
  - HOSPITALS
  - FACILITIES
  - CASINOS
  - HOTELS
  - PROCESSING
  - MILITARY
- SICK BUILDING
  - BIOLOGICALS
  - CHEMICALS
  - VOCs
  - MOLD
  - BACTERIA
  - DIESEL FUMES
  - CIGARETTE SMOKE

**How can Sanuvox Air Purifiers destroy up to 99.9% 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 99.9% destruction at one time. *Need help sizing? Just call 514-382-5823 or 1-888-SANUVOX(726-8869).*

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

Ultraviolet Rating Value (URV) is a proposed standard by the International Ultraviolet Association (IUA) 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 a 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 back page for Table 1: *URV Rating Values & Typical Kill Rates*

**How is a Sanuvox UV CoilCleaner 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 Vapor 19mm Lamps produce the highest efficiency cleanest burning Lamp available paired to high-output electronic ballasts.

Although other UV Lamps and Emitters may use questionable glass types and gas mixtures, 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 100% of the Lamps energy where it is needed.

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

Because these UV Lamps 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 minimal. 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 which have been published in various medical journals including the prestigious Lancet Medical Journal. Many UV manufacturers site Sanuvox research to show the efficacy of UV Treatment. Please visit [www.sanuvox.com/sanuvox\\_research.htm](http://www.sanuvox.com/sanuvox_research.htm) 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, odors such as bacteria, viruses, mold, mildew, smoke, formaldehyde, cleaning solvents, etc. See back page 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, day care centers, laboratories, class rooms, old age homes, hotels, smoking rooms, bars and restaurants, mausoleums, funeral parlors and morgues.

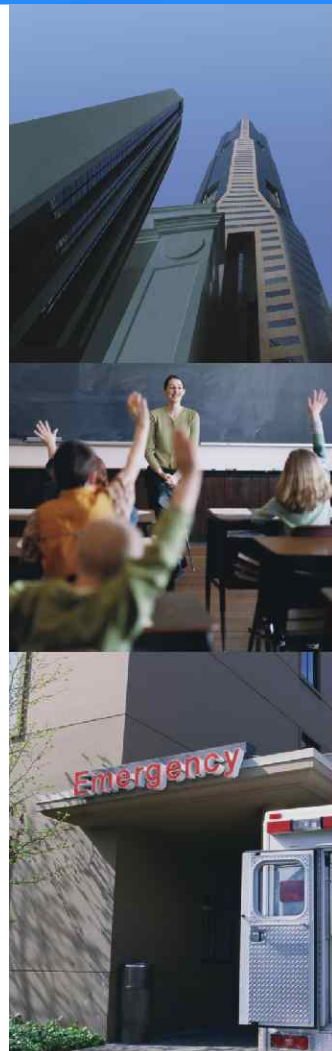
**What is my Sanuvox CoilClean warranty?**

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

	Competitive Comparison		
	Lamp Change-Out	Lamp Warranty	Fixture
Sanuvox	17,000 hrs.	12,000 hrs.	5 years
The competition	8,000 hrs.	2,160 hrs.	1 year

**What is my Sanuvox UV Air Purifier warranty?**

Please refer to [www.sanuvox.com](http://www.sanuvox.com) for the specific warranty on the Sanuvox product that interests you. All commercial UV Lamps are warranted for 12,000 hours.



**COMMERCIAL IN-DUCT UV AIR PURIFIERS**

**C2000X COMMERCIAL UV AIR PURIFIER**  
 IN-DUCT UP TO 2,000 CFM (5 TONS) PER UNIT.  
 INSTALLED INTO THE VENTILATION SYSTEM  
 URV RATING AT 2,000 CFM **18** \*Inside Reflecting Tube

**UV BIO-WALL QUATTRO IN-DUCT UV AIR PURIFIER**  
 LIGHT COMMERCIAL VERSION OF BIO-WALL.  
 CONTINUOUSLY TREATS ENTIRE DUCT  
 URV RATING AT 2,500 CFM **14** \*Through the entire duct

**UV BIO-WALL IN-DUCT UV AIR PURIFIER**  
 AVAILABLE IN 40", 50" & 60" LENGTHS.  
 UP TO 99.9% DESTRUCTION AT ONE TIME  
 URV RATING AT 10,000 CFM **19** \*Through the entire duct

**COILCLEAN B30X FOR BARD WALL MOUNT AIR-CONDITIONERS**  
 SPECIFICALLY DESIGNED FOR AFTERMARKET  
 INSTALLATION ON BARD WALL MOUNT AIR-CONDITIONERS



**STAND-ALONE OR DUCT MOUNTED**

**MB500X CEILING TILE MOUNT PURIFIER**  
 EASILY INSTALLED INTO A 24"X 24" DROPPED CEILING.  
 QUIETLY TREATS UP TO 500 S.F.  
 URV RATING AT 70 CFM **19**

**P800GX PORTABLE**  
 IDEAL FOR DAYCARE, OFFICES, CLASSROOMS & BREAK-ROOMS  
 URV RATING AT 70 CFM **19**

**HFX HEPA FILTER / UV AIR PURIFIER**  
 STAND ALONE OR DUCTED WITH A 300 CFM BLOWER  
 URV RATING AT 300 CFM **19**

**S1000FX FILTER / UV AIR PURIFIER**  
 IDEAL FOR SMOKING APPLICATIONS,  
 GARBAGE-ROOMS OR CLEAN-ROOMS  
 1,000 CFM BLOWER (UNDER LOAD)  
 URV RATING AT 1,000 CFM **16** | **20** \*Clean-Room option

**UV BIO-WALL PENTA ROOM STERILIZER**  
 DESIGNED FOR AIR & SURFACE STERILIZATION IN  
 UNOCCUPIED AREAS



**ULTRAVIOLET COILCLEANERS**

**COILCLEANRT**  
 FOR ROOFTOP  
 PACKAGE UNITS

**COILCLEANIL**  
 FOR A/C COILS,  
 FAN COILS &  
 DUCT WALLS

