



### **Where is the MicroPure installed within the ducting?**

MicroPure can be installed in one of two locations:

- the preferable and primary location is in the Plenum on the supply side, immediately after the A-Coil
- the secondary location is on the return side prior to the fan coil unit. When installed in this location, some of the purifying plasma is lost as it passes through the air handler and coils.

### **Because humidity and the conversion of water vapor to hydrogen peroxide is key to the performance of the MicroPure system, is there an optimum humidity level and is the MicroPure still effective in dry environments?**

The more humidity, the more MicroPure creates hydrogen peroxide and other oxidizers. MicroPure is still effective at low humidity levels because dry environments have less organic contaminants than high humidity environments.

### **If a humidifier is installed, where should the MicroPure be mounted?**

Always mount the MicroPure after the humidification system so that the MicroPure is exposed to the highest humidity levels possible. Typically humidification systems are mounted in the Plenum area. The MicroPure should be mounted downstream from this location. The MicroPure will not be damaged by high humidity levels.

### **The owner's manual says to replace the UV bulb every two years. If the bulb is still operating at the end of the two years, does it still need to be replaced?**

The UV bulb is the energy source which powers the photocatalytic reactor. The energy comes from ultraviolet light which cannot be seen with the naked eye. This UV energy degrades over time and after two years of continuous use the intensity will no longer be adequate for the MicroPure system to purify the environment. Consequently, regardless of whether the UV lamp is still visually operating, the bulb must be replaced after two years of continuous operation.

## How do we decide what MicroPure unit is needed?

Three MicroPure sizes are available, 5 inch, 9 inch, and 14 inch. In general, the size of the cooling system is a good rule of thumb to determine the appropriate MicroPure unit:

- 2 or 2½ Ton System: 5 inch
- 3 to 5 Ton System: 9 inch
- 5 Ton and Larger System: 14 inch

In addition to considering tonnage, also consider the biological loading which takes into account:

- Occupants who smoke (Yes, MicroPure can significantly reduce smoking odors!)
- Pets including dogs, cats, birds or other animals which create dander, feces or aerosolized urine (pet owners love MicroPure!)
- Cooking odors and grease, especially ethnic food (Fish odors? Yes, we break down the organic compounds that make up the fish odor, MicroPure doesn't cover up odors!)
- High VOC levels due to manufacture wood products, carpeting, and other materials which off-gas chemicals.
- High mold or mildew - very common in coastal areas and areas where humidity levels are high. (MicroPure kills mold that creates the musty smells, even down in the carpeting.)

When the challenges listed above are identified, and the system tonnage is close to the next larger unit, consider installing the larger MicroPure system.

Caution: Too much of a good thing is not good, and more is NOT better. Special caution should be taken when installing a system which services only bedrooms. Bedroom areas typically have low biological loading and therefore do not require high levels of purification. For this reason, follow the sizing guidelines provided and when in doubt, contact Dust Free for guidance.

## For exterior ground-mounted horizontal package units, where should MicroPure be mounted?

MicroPure is not approved for exterior mount. Install MicroPure in the crawlspace or use an approved NEMA3 enclosure (not provided).

## Should MicroPure be switched to come on with the blower or be left on continuously?

Dust Free recommends operating the MicroPure continuously. If the customer does not run the fan continuously, when the fan turns on there will be a short concentration of purification which dissipates quickly. If the MicroPure is connected to the blower circuit, the system will turn on and off frequently, causing the UV bulb to exceed its duty cycle (3000 cycles) leading to premature failure which is not covered by the two-year bulb warranty.

Recommendation from Dust Free: For best indoor air quality ASHRAE recommends continuous operation of the fan providing proper ventilation. Many customers find the noise from single speed fans objectionable when run continuously. A low-cost alternative is the VariFlow from Hoffman Controls. This solid-state controller piggybacks on the fan control circuit allowing the fan to run at a very low speed when in-between heating or cooling cycles, providing the benefits of a variable speed fan without significant cost.

## **When installing into a 220V package unit, can MicroPure be wired directly into the 220V circuit?**

MicroPure comes in two electrical configurations; 24V AC and 100-240V AC. The version which can accept 100-240V AC has an external AC to DC power adapter. This can be wired into the 220 V circuit but be aware it comes with a 3 meter power cord with standard "B" type plug which cannot be cut off and hardwired due to local and state electrical codes. The best solution is to use the 24V AC MicroPure unit and connect to the internal 24V AC transformer or wire in a separate 24V AC (40 VA) transformer.

## **Is MicroPure an ozone generator?**

MicroPure's UV bulb does generate a small amount of ozone but at the same time breaks it down to create hydrogen peroxide and other advanced oxidizers. What ozone is created is incidental and what ozone travels out into the room is insignificant - many times below the EPA limit. MicroPure is therefore not considered an ozone generator.

## **How difficult is it to change the lamp and core?**

Very simple! Typical servicing takes less than 5 min.:

- Using a nut driver remove the 4 nuts holding the MicroPure on the mounting plate
- remove the two Phillips head screws that attach the core to the ballast assembly
- slide the core off the bulb
- remove the bulb from the connector
- install new bulb and reassemble

Note: do not touch the high-intensity UV bulb with bare hands. Doing so leaves skin oils, shortens the bulb life, and can void the bulb warranty.

## **Does MicroPure have an electrical safety certification?**

Yes. MicroPure has been certified for electrical safety by ETL, the largest NRTL (Nationally Recognized Testing Laboratory) in the world.

## **If MicroPure is installed, is a whole house filter still required on the return air?**

Yes! Filtration is important for two reasons:

- MicroPure not only kills biological contaminants and breaks down chemical contaminants, but it also conglomerates particles allowing them to be more easily pulled out of the air by a high-quality filter.
- Certain contaminants such as cigarette smoke contain contaminants such as tar and nicotine which can coat the MicroPure core causing it to become ineffective. The MicroPure must be protected from contaminants found in cigarette smoke as well as grease from cooking.

Consequently, a MERV 8 or higher particulate filter is recommended.

## **What if the facility has round ducts - either flex or metal?**

The recommended installation location for MicroPure is the Plenum immediately after the A-Coil, before the transition from the air handler to the round ducting. Generally the transition to round ducting occurs after the Plenum, providing a flat mounting location. If the MicroPure must be mounted to a round duct, for flex the installer should fabricate a square box with flanges, and for metal fabricate a plate to provide a flat mounting surface to secure the MicroPure.

### **Will MicroPure's UV or purification break down duct board or flexible duct?**

No. MicroPure's UV output is shielded from the ducting with the exception of the area in-line with the airflow. Consequently UV intensity is diminished enough it will have no impact on non-UV protected materials.

Unlike high output ozone systems, the purification levels produced by MicroPure do not affect typical ducting including flexible duct.

### **How do I tell of the lamp is burned out?**

MicroPure is equipped with a mechanical indicator called a Light Pipe which reflects the light from the lamp to an indicator mounted on the faceplate, allowing the user to easily see if the lamp is still operational.

### **Can the MicroPure be used as a counter display?**

Yes - but it cannot be plugged in without the "Counter Display Kit." This kit comes with a non-UV producing bulb, special labeling and instructions. Contact Dust Free for the kit.

Caution: The high intensity UV bulb in the MicroPure can cause eye damage. Under no circumstances use the standard MicroPure for an operational counter display without the Counter Display Kit!

### **How is the MicroPure connected to the 24 V supply in the air handler?**

The MicroPure 24 V unit comes with a 3 meter cord with a blunt end (wires are stripped). This is wired directly into the 24 V transformer. An alternative is to wire in a separate 24 V, 40 VA transformer.

### **Do I still need a UVC lamp on the coil if the MicroPure is installed?**

Dust Free recommends both for optimal performance.

