

Welcome Back Campaign - UV Angel (Clean Air USA) Webinar Series* Q&A

Question: Now that the number of COVID cases appear to decline, does it still make sense to invest in UV technology?

Answer: Reports like McKinsey & Company state from experts this is not likely the last pandemic, we will face. The World Health Organization (December 29,2020) warns the COVID-19 is not necessarily the big one. We need to be ready for something that could be more severe.

Going forward companies like ESPN, Starbucks, Tishman Speyer, Phillips Edison, McDonald's, and others are shifting from response to prevention to protect employees and customers. Property and business owners need to look at their investment in technology as shift from "In Case of Emergency – Break Glass" to "Always On" in terms of pathogen protection. Outbreak response to COVID, common flu viruses, etc. are most effective when it uses mechanisms always deployed and operating.

Other compelling reason to deploy UV Angel environmental protection system include:

- 40 years of use in the medical facilities, hospitals, etc.;
- Extensive research on the efficacy of UV technology;
- Provides ease of installation and maintenance;
- Ceiling installation - Non-intrusive to business working environment (e.g., tripping hazard; frees electrical receptacles; 24/7 operation);
- UV Angel's compliance to CDC guidelines; and,
- Provides peace of mind for management and staff.

Question: Has anybody heard that PHA's have been sued because of their residents contracting COVID-19? Is there an opportunity to use litigation cost as justification?

Answer: There has been some discussion about insurers being responsible for liability. That is probably a question that still must be identified and addressed. There have been suits in a nursery home in the past. It is something to consider when addressing and mitigating the virus.

Question: What does it cost to run this equipment? From an electrical load standpoint.

Answer: The load is no greater than a typical 4-bulb T-8 unit. So, if you are swapping out for an existing unit, it should be a wash.

Question: What is the energy consumption for these units?

Answer: The UV Chamber and fans consume approximately 120 watts. Total system wattage is about 170 watts for UV Angel including an LED downlight. By comparison, a standard 4-lamp T8 fluorescent lighting fixture consumes about 120 watts.

***Questions and Answers are from UV Angel Webinar Series**

Question: Does Clean Air provide installation or only material?

Answer: We looked at both approaches, turnkey and self-installed.

In the interest of safety and speed, the self-installed proved to be more effective and convenient to the client.

1. The cost is less expensive if installed in-house. If CleanAir had a national installation contract, the cost would be 20-25% higher. We can contact locally on your behalf if you have a preferred electrical installer. Provide us your preferred vendor.
2. Safety is important. Each client has a COVID 19 protocol for its maintenance staff. Bringing in external installers introduces risk.
3. If you manage the installation, you control the priority and schedule for the units that are self-installed.
4. If in-house maintenance staff are not available, clients preferred to hire their local electricians, with a track record with the customer over a national contract installer.

Question: The dollars quoted in the presentation for MF buildings, again, do they include installation or material only?

Answer: Materials Only.

Question: If we look at stairwells, is it safe to say possibly only do the first 3-4 floors? Most of our elderly will not be walking up beyond that level and I am thinking that if someone comes down from a higher floor, by the time they reach the ground floor they will have received the benefit of passing through 3-4 floors of treated air. Does that make sense?

Answer: I see where you are going with this, however, the best protection is where the UV-Angel system is installed and working. Since the ventilation in a stairwell is relatively stagnant, installing a unit on alternate floors should provide sufficient flow to mitigate risk throughout the stairwell. Remember also that the handrails need to be wiped down.

Question: Where are these systems being used?

Answer: We have these in hospitals, we have these in restaurants. Our focus before the pandemic obviously was healthcare. For doctors, who are counting infections every day, and are accountable to the government or regulatory agencies. But since the pandemic has happened, we have quite a few in schools, particularly residential schools, boarding schools, areas where people are responsible for other people's children in an academic and boarding setting. We are dealing with a lot of office environments. Quite a few office and real estate management companies are also contacting us. Look for *UV Angel's* happy customers: Starbucks, McDonalds, St. Jude's Children's Hospital, ESPN, Tishman Speyer (Commercial Real Estate), Phillips Edison (shopping center developers), V.A. Hospitals and Nursing Homes, Pine Forge Academy, Butler School District 53.

Employers are trying to get their people back into the work environment and make them feel comfortable and safe that something else is being done. There is no silver bullet, but people feel much more comfortable when steps are being taken to protect them. We are dealing a lot with businesses trying to get back to work and looking for a competitive advantage in these difficult times to rebuild their clientele.

Question: Do these units need to be mounted near existing air systems?

Answer: No not really, we need not work with existing air. People disturb the air, so in the existing air there will always be some airflow. Many environments work for us. Sometimes where there are requirements, we can work to help meet those requirements.

Question: What other mounting kits are available besides the drop-down ceiling?

Answer: There are surface mounting kits we have, and these allow us to put the units on sheet rock, concrete, wood, and sidewalls. Where there are high ceilings, we have dropped them down on cable to the 12-foot zone where they are most effective. We have faced a situation where we could not find a mounting solution.

Question: Do they work in an area with "stagnant" air, i.e., corridors, stairways with no HVAC?

Answer: These systems are adaptable to places like elevators and the corridors outside the elevators. We have been working with a lot of public housing folks on stairwells, because a lot of residents are afraid to take elevators during the pandemic and prefer to take the stairs. These stairwells often have zero ventilation and are like concrete caverns. Putting these units within the stairwells has been an exceptionally good use of the technology, and greatly improves the air quality in those areas.

Questions: How do I get specific information related to my buildings?

Answer: Call Alan Watts directly at 914-525-4444 or email Alan at alan@cleanairusa.com for questions on the UV Angel System. If you want an estimate, Alan will need some preliminary information including:

1. Intended use of the space (e.g., office environment, stairwell, community meeting room, elevator, etc.)
2. Approximate square footage of the space (e.g., 20X20 office environment)
3. Approximate number of people that use the space in an average day.

Question: Should I consider installing a UV system solution as an integral part of my HVAC system instead of separate ceiling units?

Answer: This is an important investment by the Housing Authority to keep the staff and residents safe, and carefully deliberations are part of the decision-making process. Many PHAs who have considered installing UV light devices in air handling and other ventilation equipment have found the information below helpful in understanding the differences in approaches and have found these 7 points below compelling to their final decisions. Consider:

1. HVAC systems do not affect the rooms where people are communicating, working, or congregating. Without upper-ceiling UVGI as recommended by the CDC, these micro-environments are the breeding grounds for surface contamination and airborne transmission. If there are also HVAC return vents in these rooms, this can lead to spread in other spaces.
2. The air speed in HVAC, 400 to 1000 CFM is much too fast for UV-C to have much effect on eliminating pathogens. However, it is effective in helping to eliminate mold growth in ducts and on coils.
3. When the HVAC system has met the temperature set point, the system shuts off and any pathogen removal has stopped. UV Angel runs 24/7 maintaining a pathogen free space.
4. HVAC systems are not designed to be a pathogen control device. Even if HEPA filters are added to the system, they kill no pathogens they may capture. This opens the door to another host of problems such as having filters changed often which requires hazardous waste removal protocols and expensive filter changes on a frequent basis.

5. In duct UV-C is something we recommend as part of the solution, but in room UVGI is proven to keep people safe and in line with government recommendations.
6. Single point failure - UV protection is predicated on performance of the HVAC. HVAC problems could hamper protection of UV. UV Angel can operate when HVAC system is off.
7. Cost to add equipment may not be cost effective from a total cost of ownership (TCO) perspective, inclusive of maintenance and installation.

Question: Is there value for a higher MERV filter? As I understand it, there is a MERV-6 filter. I do understand the, without UV-C, risks of bacterial buildup in high MERV filters but wonder (a) why a MERV6 and (b) whether there exists/could be an option for a higher MERV filter in the system?

Answer: Using the MERV-6 filter is fundamental to the science and technology of the system. We need to provide as much airflow to the UV-C chamber as possible. The MERV-6 provides the perfect air flow while trapping large particles of dust. We want to keep the chamber clean and allow the proper dosing of UV-C to eliminate pathogens.

Question: If I understand it correctly, the system replaces a traditional ceiling fixture with a combination of lighting with air filtration and UV-C treatment. If that is correct, what is the energy demand for the system? Compared to the light fixture it replaces? The power consumption of the Angel Air with a LED downlight unit is like a 4-bulb T8 fluorescent fixture. If the non-downlight unit is installed it would consume less power. Unclear to me: are the lights (not the UV-C) in the system LEDs? If LEDs, there is likely an energy savings associated with replacing older building/facility lights ... would be interested in the life cycle for this.

Answer: The downlights are LED. Therefore, there could be an energy savings in deploying this system versus older ceiling fixtures. Although, it is unnecessary to do a complete one for one swap out to achieve sufficient pathogen control.

Question: The videos seem to be in a relatively small (storage room like) room. How many systems are required per square foot? Roughly, across K-12, classrooms are about 800 square feet. Would one unit suffice? If not, how many?

Answer: We look at a system design based on several factors, such as the facility (hospital vs. office vs. retail business, etc.), the number of people occupying the space and the overall human traffic in that location. We look at how many units will provide the number of complete air turns per hour as needed. An 800 square foot classroom with an average of 20 kids, would probably require 3 to 4 units.