

Consultants, Engineers, Users and Dealers: CaptiveAire recommends that you avoid ineffective kitchen ventilation products that can cause safety hazards and poor performance in commercial kitchens. These ineffective products include: *hoods containing UV lights and those claiming ultra-low exhaust flow-rates.*

UV Hoods have a record of failure in high heat, heavy effluent producing applications.

- Ultraviolet (UV) light is electromagnetic radiation with a wavelength shorter than visible light and longer than X-rays. The sun emits energy at many wavelengths including ultraviolet. Solar energy includes UVA, UVB and UVC wavelengths. UVC has the highest energy and is most dangerous. However, because most of the UVC emitted by the sun is absorbed by the ozone layer, its harmful effects have received little attention; however, it is the wavelength used in UV hoods.
- Unshielded exposure to UVC is hazardous to the skin and eyes. All UV wavelengths cause damage to skin and eyes.
- UVC deteriorates UVA-rated wiring devices, which means it potentially destroys its own wiring insulation.
- UVC lamps require frequent cleaning, repairs and replacement, all of which are very costly. Reference one opinion presented in "UV Technology – A Light at the End of the Duct" by Jack Grace found in *The Ikeca Journal*, Issue 23 Spring 2008.
- Some models of the UV hoods rely on mesh filters to prevent large grease aerosol particles from reaching the hood's UV chamber. Use of mesh filters in exhaust hoods is specifically prohibited by NFPA 96, UL 1046 and NSF.
- There is no published report supporting adequate performance of UV hoods in tests that use real-world conditions. However, there are forensic reports documenting poor operating results. These are available on request. Despite being relatively new, some UV hoods are already being decommissioned and removed.
- UV hoods create and release ozone, an environmental pollutant.
- Neither ASTM nor ASHRAE have testing protocols for UVC use in commercial kitchen hoods for grease emissions control.

Ultra-low flow rate hoods (below the minimum capture and containment flow-rates) degrade indoor air quality and working environment in commercial kitchens.

- At ultra-low flow-rates, hood performance is degraded because the exhaust design is below the threshold of capture and containment of heat and cooking effluents.
- Manufacturers of these hoods report test data that does not reflect the highly variable conditions in restaurant kitchens.
- At ultra-low flow-rates, convective heat loads may not be captured and will create a difficult working environment for cooks and diners, leading to reduced productivity and dining experiences.
- Poor performance of these hoods may cause severe problems including spillage of effluent into the kitchen, additional load to the HVAC, higher operating costs and degradation of indoor air quality.

Some manufacturers of Commercial Kitchen Ventilation systems purport that UV and Ultra-low CFM hoods are the future. Numerous forensic field reports indicate these types of hoods are ineffective with heavy duty cooking loads. CaptiveAire Systems utilizes proven, effective and sustainable technologies for CKV design and emissions control.

US and Canadian codes require adequate capture and containment of cooking effluents. CaptiveAire recommends the use of hoods that are tested to *ASTM F 1704-05, "Standard Test Method for Capture and Containment Performance of Commercial Kitchen Exhaust Ventilation Systems."* This standard uses Schlieren flow visualization to determine the threshold of capture and containment of a hood when challenged by a variety of appliance combinations, and under both cooking and idle conditions. The ASTM 1704-05 standard is a guide to exhaust flow-rates; however, field experience based on type of cooking, temperatures, equipment diversity, equipment layout and listings to UL 710 are imperative in determining the appropriate minimum flow-rates for the application.

This information is provided by CaptiveAire, the leading producer of Commercial Kitchen Ventilation Systems in North America.