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Continuous monitoring of the breathing area in commercial kitchens for Ozone air treatment in ducts

Commercial kitchens may create delicious food, but they also produce lots of grease and odours. Ozone gas can be used to reduce odours and get rid of grease because it decomposes fat into carbon dioxide and other by products that are easily exhausted out through a ventilation system. Using ozone to eliminate grease build-up from air extraction ducts can help:

- Reduce the need to clean the duct
- Lessen the risk of a fire
- Weaken odours wafting into other buildings or public places
- Maintain proper operation, lifespan and efficiency of the ventilation equipment

Ozone is naturally occurring, eco-friendly and cost effective. However, to tackle grease and odours, an Ozone generator is used to generate the gas. If the generator produces too much Ozone or the ventilation system isn't working properly and the gas levels build-up inside the kitchen space where the cooking staff are working, a dangerous situation could occur. Even a low amount of Ozone can cause respiratory distress and damage, and above recommended levels can result in death.

For a commercial kitchen environment, Critical Environment Technologies' [CGAS Detector](#) with an internal electrochemical O₃ sensor offers the features and functionality to ensure a safe breathing environment.



Commercial kitchens that use an Ozone generator as part of their air duct and odour maintenance program should have Ozone gas detectors in the kitchen to protect staff from any possible build-up of gas.

In the kitchen area, below the height of the range hoods, should be mounted a CGAS Detector with an Ozone



sensor that will continuously monitor and measure the ambient levels of Ozone in the kitchen working space. Depending on the configuration of the kitchen additional gas detectors may be required to ensure all potential sources of Ozone are being monitored.

The CGAS Detector must be connected to a Controller, Building Automation System or other control panel using Modbus or BACnet digital communication. The CGAS Detector will transmit the gas level readings to the controller. If the level of gas exceeds the acceptable level, the controller will initiate a set of preconfigured responses such as triggering alarms, shutting off the Ozone generator and turning on the ventilation fans.

A remote visual and audible alarm device such as the Remote Strobe & Horn (RSH-24V-R) should be mounted on the ceiling or wall in the kitchen.

NOTE: This application is of a typical ozone treatment system in a commercial kitchen that has low discharge limits. The CGAS Detector has an Ozone sensor range of 0 - 2 ppm and is being used to monitor the breathing environment for life safety reasons.