

## Odor reduction with smart UV technology Humboldt Institut e.V.

### UV technology solves challenges with kitchen odors, annoyed neighbors and the environmental agency.

Berlin is currently one of the most exciting metropolis in Europe. This attracts hundreds of international students yearly to the Humboldt Institut in Berlin where they can learn to speak German while living in one of the trendiest neighborhoods of Berlin. For months however, the management of the language school has been put under pressure from environmental agencies in the city to react to the odor complaints of one of the neighbors of the language school, otherwise the kitchen would need to shut down, leaving the students without meals. After contacting many suppliers and evaluating many options, the management got in touch with Heraeus Noblelight.

#### Description of the initial situation

Upon visiting the kitchen facilities (a kitchen hood of around 4,000 cubic meter shift of cold food), it was clear that UV could be a good solution. However, the environmental agency could be installed because the language school is located near the famous "Be" are required to "harmonize". This made the case more difficult, since chimneys surroundings of people. Therefore, it would be necessary to destroy the odor and ozone: a challenging task.



#### Testing and evaluation of results

As an initial step, Heraeus offered the management of the language school to test the UV solution with the Heraeus test reactor (up to 4x400W UV lamps, jokingly named "the Torpedo") and a catalyst bed for ozone reduction at the end of the exhaust. The equipment was installed in December 2014 and tested with diverse "cooking runs", including salmon, onion, garlic, and eggs (all of them known for their peculiar smell). Multiple "odor sample bags" were extracted out of the catalyst and given to the school management for testing. After testing diverse "UV doses", it was found out that no odor could be perceived at the UV dose of 800 Watts. Due to the acute problem with the neighbor, Heraeus provided the test unit as an "emergency solution" to reduce complaints in the meantime, until the final equipment could be delivered. Since the installation of the test unit, there were no more complaints from the neighbors and the management of the language school was able to obtain the necessary permits to continue operation of the kitchen.



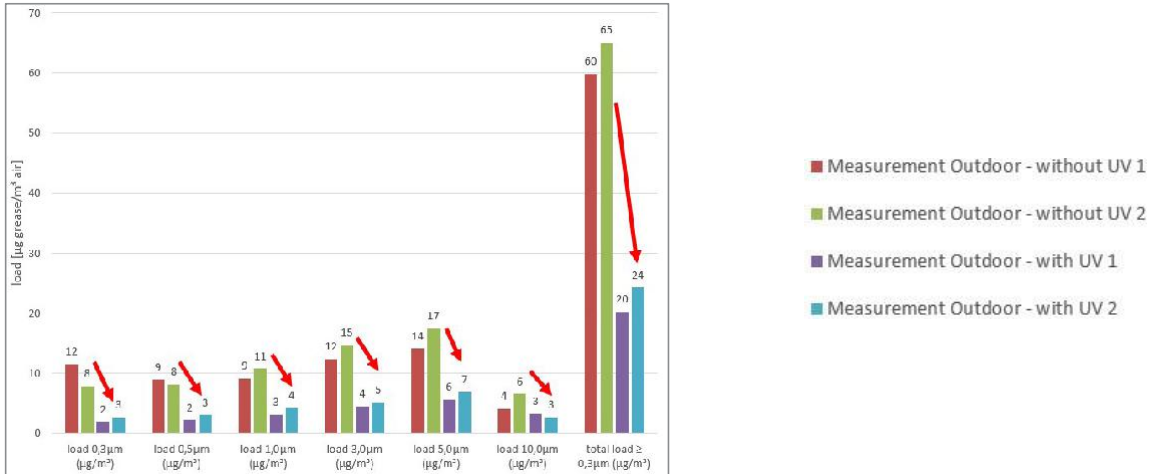
**Solution and initial commissioning**

Since the optimum dosage was obtained at 800 Watt, the system to be installed would be equivalent to a UV Control System 4.220, 4 NIQ 200/120 lamps, and one catalyst module 16.500. A brand new UV Control System 4.220 was delivered and the maintenance personnel of the language school installed it in the kitchen hood, following the indications of Heraeus. The kitchen staff was informed about the secure handling of the UV system.

During the commissioning of the UV Control System, Heraeus took the opportunity to measure the particle emissions of the frying station and determine the amount of grease being transferred to the kitchen air.

In summary: when the kitchen air is being treated with UV, the amounts of grease particles in the air is being consistently reduced.

The graphic description of the results is shown below.



Load of the kitchen exhaust air

**Summary**

Industrial kitchens with odor complaints now have an effective solution from Heraeus Noblelight, including difficult situations where few space for a ventilation system is available. The combination of a UV amalgam system for kitchens, plus a very effective ozone reduction catalyst, facilitates the seamless operation of any kitchen and reduces odor complaints from neighbors.

Faced with the option of having to shut down operations, an investment in Heraeus solutions is easily justified.