SOLUTION

WITHOUT

COMPROMISE

Powered by:

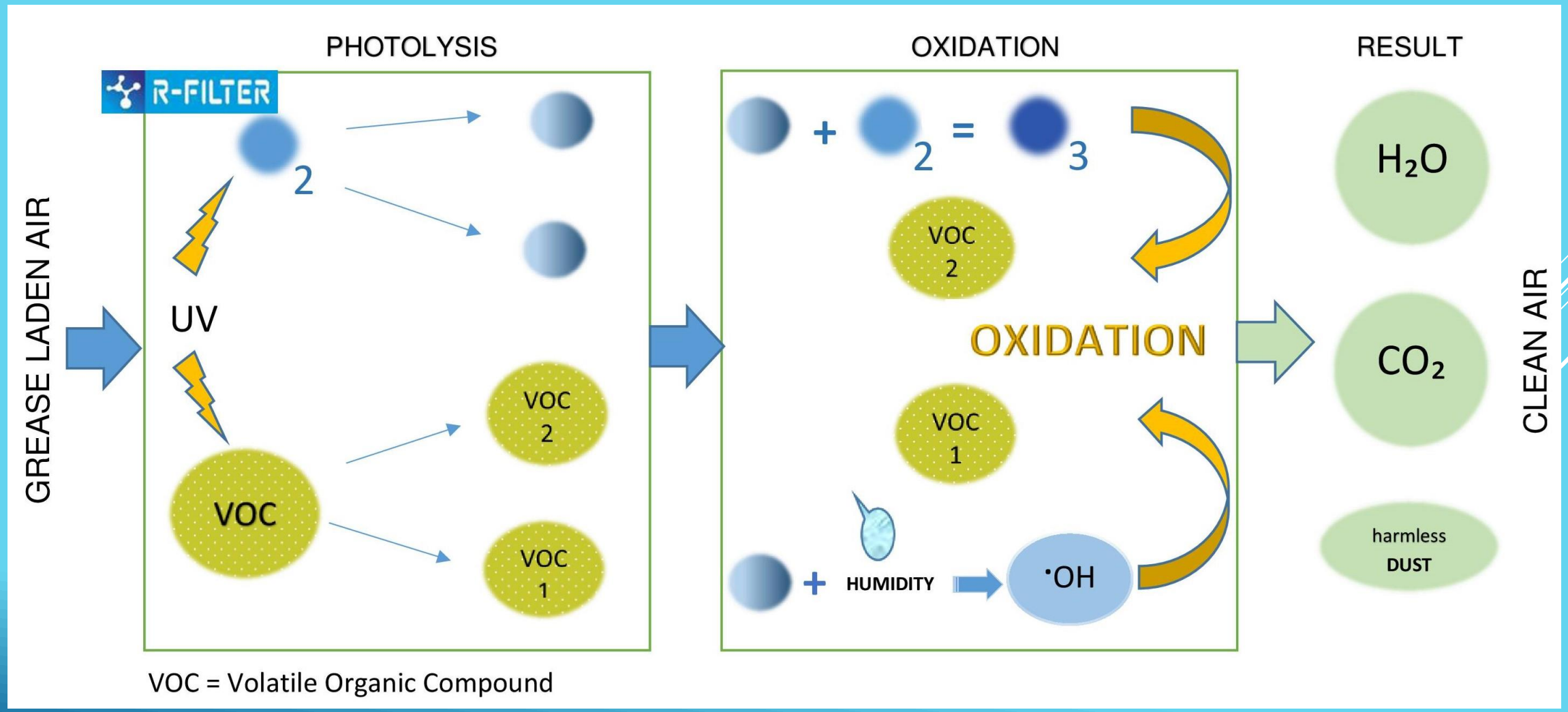
R-FILTER

Have you ever heard this phrase „cold burning”? This is the process used by our devises to treat kitchen exhaust air.

Backround:

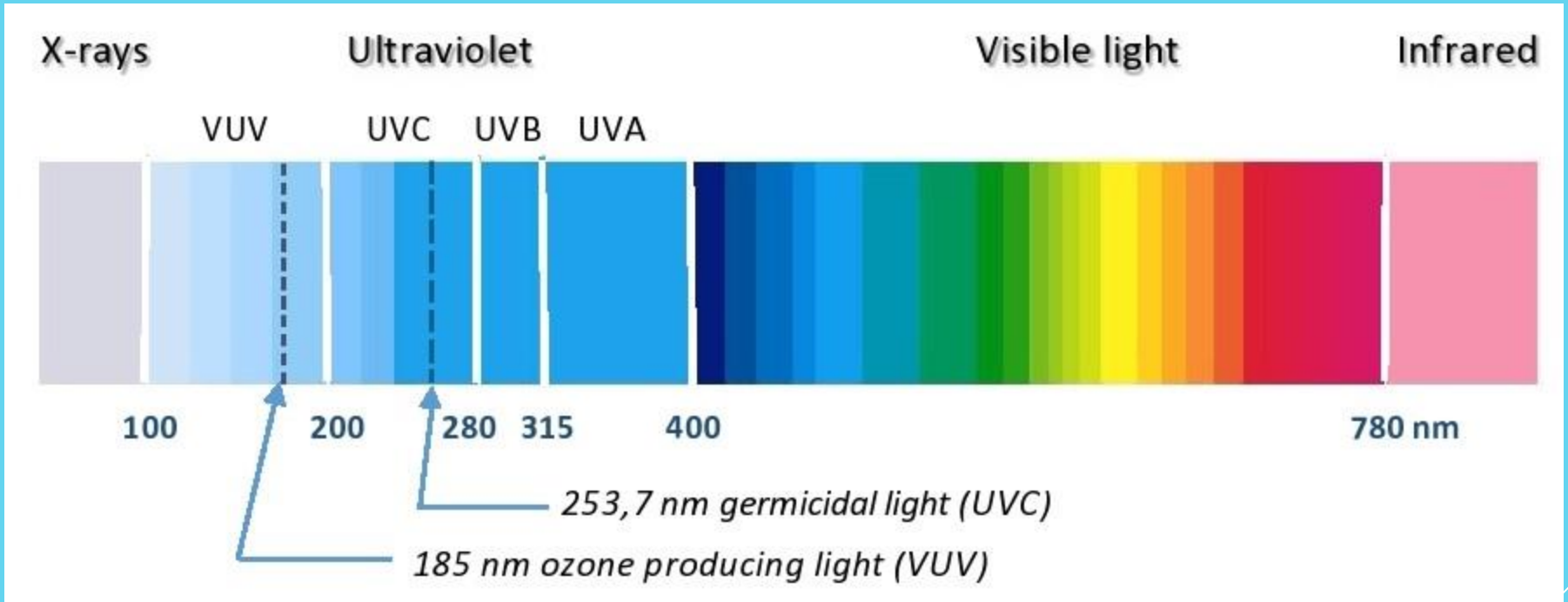
- **Even the most efficient aerosol separators used in the exhaust hoods above the cooking and frying surfaces are not capable of separating fat molecules less than 5 microns. They continue to flow and contaminate the elements of the ventilation system.**
- **Consequences: fire hazard and the cleaning costs a lot of money**
- **Cleanliness of ventilation systems is considered important for human comfort and health, energy consumption, system service life**
- **The European Standard EN 15780 specifies the general requirements and procedures necessary in assessing and maintaining the cleanliness of ducted ventilation**

- **UV cleaning technique is proven to be effective against also smaller grease particles**
- **The „cold burning” process in our device:**



- The UV light in phase 1 (photolysis) breaks up the long-chain fat molecules and splits oxygen molecules (O_2) into two highly reactive single oxygen atoms (O).
- During phase 2 (oxidation) this single atoms combined with normal oxygen molecules (O_2) form ozone (O_3), which strongly oxidizes the volatile organic compounds (VOCs), eliminating odors and disinfecting the air.
- The single oxygen atom (O) reacts quickly also with the humidity of the exhausted air and produces highly reactive hydroxyl radicals ($\cdot OH$), which turn into the oxidation process with little reaction time and high efficiency.
- The final result is water vapor, carbon dioxide and some harmless dust, which are removed with the exhaust air flow free of deposits.
- The ventilation duct remains practically clean and free of grease.
- By type, the equipment could be classified according to the European Standard EN 16282-8, Annex A, UV-Devices for the treatment of aerosol.

- **The location of the ozone generating radiation of 185 nm in the light spectrum:**



- **Because the wide spectrum R-FILTER UV lamps emit also a wavelength of 253.7 nm, their bactericidal and disinfecting effect is working too.**

Type of devices:

Type	Size LxWxH (mm)		Max. air flow (m^3/h)	Connection (mm)	Supply voltage (VAC)	UV lamps	Input electric power (W)	Current flow (mA)	Safety devices	
	Device	UV reactor chamber							Door contact switch	Flow sensor
UVS-1500M1A	780x550x560	595x450x495	1200-1500	Ø 400	230/50	6x25W	150	700	✓	✓
UVS-1500M1S	1080x550x560	895x450x495	1500-2000	Ø 400	230/50	6x25W	150	700	✓	✓
UVS-2500M1A	780x550x560	595x450x495	2000-2500	Ø 400	230/50	10x25W	250	1100	✓	✓
UVS-2500M1S	1080x550x560	895x450x495	2500-3500	Ø 400	230/50	10x25W	250	1100	✓	✓
UVS-4400M2A	1080x1000x660	895x910x595	3500-4800	800x400	230/50	10x30W	300	1300	✓	✓
UVS-4400M2S	1480x1000x660	1295x910x595	4800-6000	800x400	230/50	10x30W	300	1300	✓	✓
UVS-5500M3A	1080x1000x660	895x910x595	6000-7200	900x450	230/50	12x55W	660	2900	✓	✓
UVS-5500M3S	1480x1000x660	1295x910x595	7200-9000	900x450	230/50	12x55W	660	2900	✓	✓
UVS-6600M3A	1080x1000x860	895x910x795	9000-11000	900x600	230/50	14x55W	770	3400	✓	✓
UVS-6600M3S	1480x1000x860	1295x910x795	11000-13500	900x600	230/50	14x55W	770	3400	✓	✓

Areas of use:
Typical applications of the device are catering, canteen kitchens, fast food restaurants, show kitchens, the food industry, as well as places where grease and oil are heated and the grease-laden air causes deposits in the exhaust duct system and odorises the environment.

Installation conditions:

- **The UV device shall be installed in the low pressure section of the exhaust air system behind the aerosol separators of the kitchen ventilation hoods**

- **The customer shall use effective aerosol separators in accordance with EN 16282-6**

- **For the installation positions specified in the operating instructions, the customer shall install in the duct a pressure sensor in accordance with EN 16282-8 as a safety device, shall ensure that no ozone is released into the building. The pressure sensor needs to be set up so that the UV system is automatically shut down should the differential pressure fall below 20 Pa.**

- **The UV device shall also be connected with the exhaust fan via controller and is only permitted to operate when the exhaust air fan is running**

- If the exhaust air can not be blown out into the atmosphere above the roof, but into an inner courtyard, street level or other critical area, an active carbon filter with appropriate pre-filter should be used at the end of the exhaust duct
- The air velocity in the UV emitter area must not exceed 4 m/s otherwise the splitting up of the molecule chains is not ensured
- The length of the exhaust air duct located after the device shall be dimensioned so that the residence time of ozone from the device to the exhaust fan should be at least 3 seconds
- If the exhaust fan is driven by a V-belt, the V-belt must be made from ozone-resistant material
- The temperature of the exhaust air in the UV emitter area must not exceed 45°C and the humidity must not exceed 85%

Sample for kitchen exhaust cleaning. Restaurant in Vienna after 1,5 years.

Duct directly in front of our device:

Duct directly after our device:

Advantages of use:

- Effectively removes the grease and odors from the exhaust air
- Significantly reduces the cleaning and maintenance work
- Significantly reduces the risk of fire
- Higher life of the exhaust air system
- No more odor pollution for the neighborhood
- Chemical-free operation
- Residues are 100% biodegradable
- No environmental pollution
- It does not produce nitrogen-oxides
- Destructs effectively the bacteria and mold spores
- Rated average life of UV lamps: 12 000 hours (85% output performance)
- Stainless steel housing, no risk of corrosion
- Very low operating costs
- Payback period 1.5 to 2 years