

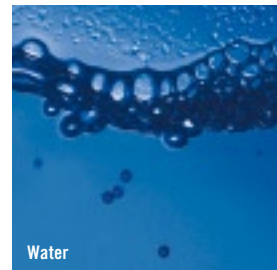
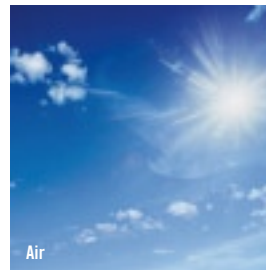
Heraeus



**Ultraviolet Light**  
**for Industrial Food Processing**  
Disinfection and Oxidation

# Ultraviolet Light for Industrial Food Processing

## Disinfection and Oxidation



In the manufacture, processing, filling and packaging of foodstuffs, hygiene and freedom from germs is not something for negotiation. Disinfection with ultraviolet light is a cost-effective and environmentally-friendly alternative to conventionally used chemical processes. Short wave UV-C radiation has an intensive bactericidal effect. Micro-organisms such as viruses, bacteria, yeasts and fungal spores are killed by UV radiation in a matter of seconds. UV light is very versatile and can be used to treat water, air and affected surfaces.

By irradiation with short wave UVC, germs are rendered harmless on surfaces such as packaging materials, working surfaces and some foodstuffs. The process has been used to great effect for the disinfection of packaging in the dairy industry to extend shelf life and freshness.

Heraeus Noblelight is the UV specialist with the know-how and the years of experience and is the natural partner to provide special solutions in UV disinfection.

### The Advantages of Heraeus Disinfection

- Cold UV radiation
- No need for the addition of chemicals
- Not detrimental to the environment
- Short irradiation times
- Ease of handling
- Low maintenance
- Low operating costs
- Can be retrofitted into existing plant and machinery

### UV Lamps for the Disinfection of Surfaces

- **Packaging** in food filling plant, e.g. for lids, cups, sealing and packaging foils for drinks, dairy products and foodstuffs in the cool chain. Heraeus UV lamps help to extend foodstuff shelf life.
- **Conveyor belts** for conveying meat, fish, potato products, fruit and vegetables BlueLight UV disinfection kills up to 99.9% of total germs on conveyor belts. An economical step towards improved hygiene in the food industry.
- **Foodstuffs:** Surface disinfection of foodstuffs e.g. of fruit and vegetable products and hard cheeses. A basis for long shelf life.





### UV Lamps for Air Treatment

- **Store rooms:** Disinfection of air in the food processing industry e.g. for reducing germ levels in store rooms and in the head spaces of silos.
- **Kitchen hoods:** Treatment of exhaust air in the exhaust hoods of commercial kitchens, as a fire prevention measure, “cold burn-off” of greases and elimination of odours (aerosol and aerosolate treatment).

Individual UV treatment is necessary for exhaust air containing organic compounds, such as greases and odorous substances and for air at different temperatures. Special ozone-producing lamps are used for oxidation, the “cold incineration” of residual greases in the exhaust air.

### UV Lamps for the Disinfection of Water in the Food- and Drinks Industry

- **Drinking water:** Germs in water used in the production of drinks are rendered harmless by treating with UV light.
- **Process water** is disinfected by UV radiation for recycling after being used for flushing and rinsing.
- **Chip ice:** Water disinfection in ice machines for the production of chip ice.

### Custom-built UV Lamps

Heraeus Noblelight works closely with manufacturers of food processing equipment and offers the optimum lamps for disinfection and oxidation. The radiation spectrum, UV output, lamp temperature, illumination length and geometry are precisely selected to suit the particular application.

UV lamps are easily and economically fitted. As the lamps are fitted in a quartz glass safety tube, they are also easily and quickly cleaned. The relevant holding springs, connecting plugs and electronic power supply units are also available.



“Cold burn-off” of greases in a kitchen hood

### Disinfection of drinking water



## Technical Data

### BlueLightUV Module

BlueLight disinfection modules are supplied ready for immediate use and consist of a UV cassette, ventilation and power supply.

Arc length	365 to 865 mm
Total length	530 to 1,030 mm
Radiation density at 20 mm distance	18-40 mW/cm <sup>2</sup>
Irradiation time for foils	2 seconds
Irradiation time for cups	up to 6 seconds
Window temperature	30–50 °C
Electrical supply	230 V, 50/60 Hz
UV spectral emission	254 nm
Lamp life	4000 hours with initial UV-output of 60%

### UV Amalgam Lamps

Arc length	25–150 cm
Electrical power	50–300 W
UV spectral emission	185 nm, 254 nm
Environmental temperature	max. 90 °C
Lamp life	around 4000 hours with initial UV-output of 65%

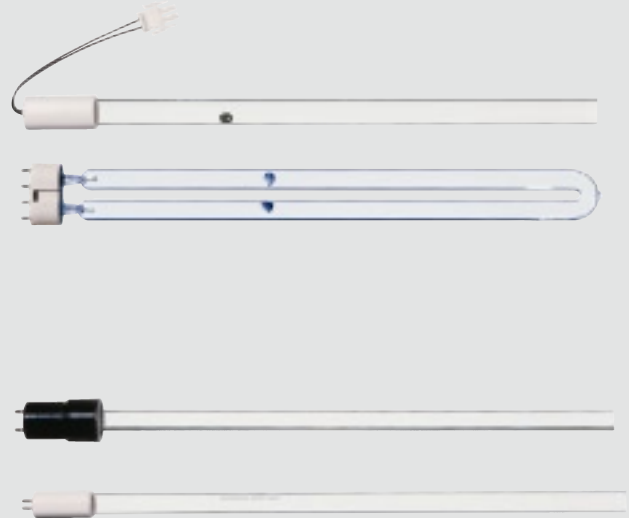
### Hg Low Pressure Lamps

Arc length	10–150 cm
Electrical power	5–80 W
UV spectral emission	185 nm, 254 nm
Environmental temperature	5 °C to 40 °C max,
Lamp life	around 8,000 hours with initial UV-output of 50%



### Modules for Hire

Heraeus offers customers hire modules for carrying out tests on the relevant machine or in the laboratory. This helps the end user to establish the model and number of BlueLight cassettes required for surface disinfection in individual processes



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**Safety Information:** UV radiation is harmful to the eyes and the skin. Consequently, appropriate safety measures must be employed whenever UV lamps are operated. Never look into UV radiation without eye protection and cover any parts of the body which are exposed to radiation. UV radiation at 185 nm and 254 nm can be screened by normal glass, transparent plastic, such as "Makrolon", and practically all opaque materials. When using ozone-producing emitters, measures must be taken to ensure compliance with the MAK values (limits for ozone concentration).

We reserve the right to make changes to illustrations and technical data in this brochure without prior notification.

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