



Intense, cold and dry
Efficient disinfection of packaging materials
Premium UV solutions from Heraeus Noblelight

Intense UV light

for the food industry



Microbiologically sensitive bulk products, such as foodstuffs, demand hygienic packaging materials. Practical applications include filling and sealing machines for dairy products and beverages. UV radiation reliably disinfects dairy product cups of various shapes, heat sealing or tubular films, lids and caps or the necks of bottles. This greatly extends a product's storage life, thus reducing the number of returns of food that has gone bad. Manufacturers benefit by saving time, effort and money.

Heraeus Noblelight's innovative Premium system now even more intensively sterilises packaging materials for paste-like, dry or liquid fresh products stored in the cold chain, such as yogurt or milk, but also cans or bags for milk powder.

Compared to chemical and thermal methods, UV radiation treatment is a very reliable and economically efficient method and can be used in continuous operation on filling lines. Ultraviolet light at wavelengths around 254 nm destroys the DNA of all microorganisms. If used properly, it takes seconds to deactivate viruses and kill microorganisms such as bacteria, yeasts and fungi in an environmentally friendly manner because no extra chemicals are needed. Heraeus Premium systems reduce the number of surface germs by up to 99.9%.

The UV lamp is the only consumable. Its service life is rated at 12,000 operating hours* or, assuming 24 hours of operation, 2 years of effective use. During that time, 86 million cups can be disinfected with only one Premium UV system. Breaking down the initial capital expenditure to a single cup would result a lot less per cup, as shown in the sample calculation below.

Sample calculation:

Two Premium systems are required for an 8-row machine with a 36,000-hour running time (about 6 years). One system is sterilizing the cups, the other is sterilizing the sealing film. Including the film, the sterilization costs of 100,000 cups amount to only 24 EUR.

* with a decline in its intensity of about max 20 %

Premium system

for form, filling and sealing machines



Premium system with 6 UV lamps and control module

Heraeus offers a new and powerful Premium system for UV disinfection, specially designed for food industry applications. A new generation of lamps produces high intensities and warrants a long service life. This high intensity system allows customers to use fewer modules, reducing service requirements and overall costs. Apart from these economic benefits, Premium UV systems are marked by their ease of installation and operation. Thanks to the breakage detector on the window of the module, the systems are able to operate safely on the production line.

Due to the new starting procedure, the UV lamps reach their full UV capacity after only 90 seconds. They can be turned on and off without any loss in quality. A quick start solution for reduced warm-up times increases the system's speed and reduces operating costs. Although the UV modules generate a high irradiance, the UV radiation is cold. Therefore, the packaging material is not heated. The disinfection method is thus perfectly suited to heat-sensitive materials such as plastic cups or heat sealing film. Due to their geometry, Premium systems are particularly well adapted to in-line filling machines with 4 to 12 rows of cups.

New Premium systems offer the highest level of safety at low costs:

Safety aspects:

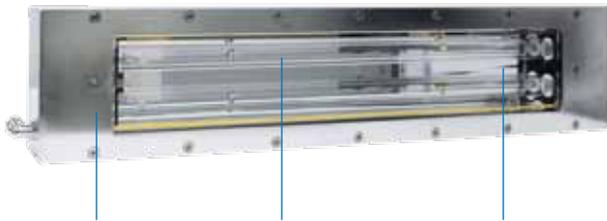
- Integrates into your HACCP concept: Quartz glass pane with breakage detector, temperature and radiator function will be controlled automatically
- Intense cold UV radiation does not heat up the packaging material
- Emergency stop function turns off the UV lamp while still providing uninterrupted cooling
- Fit for CIP (cleaning in place)
- Due to its IP67 protection rating, the Premium system is perfectly safe to use in humid or moist environments
- Shielding of the UV can be achieved by transparent plastic covers (such as Makrolon®).
- Environmentally friendly as no additional chemicals are required

Optimized costs:

- Short exposure time (1 to 4 seconds) for reduced operating costs
- Very short warm-up time of approx. 90 seconds for improved economic efficiency
- Economical due to low maintenance
- Easy to use; retrofit for filling and sealing plants
- Investment & operating costs:
24 EUR / 100,000 cups

Premium system

Features



Stainless steel housing IP67

Premium UV lamp 12,000 operating hours

Quartz glass pane with breakage detector

- Compact – the modules require very little space
- Electronic ballasts and the ventilator share the same control module for ease of retrofitting
- Air, not water-cooled; the ventilator in the control module sufficiently cools up to three UV modules
- Equipped with a service hour meter and an On/Off indicator
- Supply voltage 180–264V /50/60Hz connectors
- Package includes: UV module and control module with power supply, service hour meter, forced ventilation/air cooling and air hoses
- Premium systems are available with UV modules in 5 standard sizes

How to choose the correct Premium system variant

Cups, heat sealing films or sealing boards require different exposure times:

Cups:

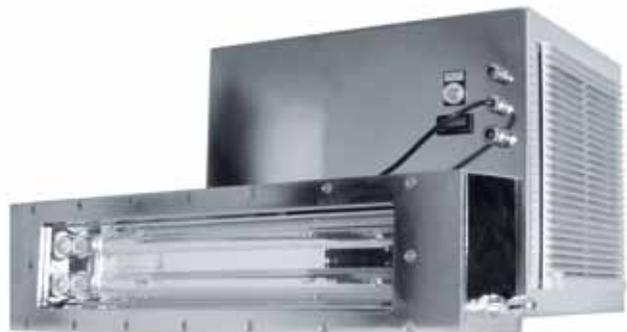
- Approximately 4 seconds* of exposure, depending on height of cup
- It is sufficient to illuminate e.g. two cycles

Films:

- Films require 1 to 2 seconds* of exposure
- Boards are preliminarily disinfected and also exposed for only 1 to 2 seconds*
- Allow at least 20 mm between the UV module and the film

The appropriate Premium system variant also depends on the dispensing/feeding length as well as on the microorganism to be killed. Bacteria, for example, require a lower lethal UV dose than mold. Please ask our UV application experts for assistance with adapting the variant to your filling line.

Testing on site – ask for our systems for rent to test the direct application of the Premium system in your process.



Premium system with 2 UV lamps and control module

*No guarantee / all data reflects test results obtained under laboratory conditions.

Premium systems for UV disinfection

Technical data



Fig. 1



Fig. 2

Technical data of Premium systems with 2 lamps

UV module type	Unit	P2036	P2062	P2087	P2132
Radiation exit area (size of window)	mm	367 × 111	617 × 111	867 × 111	1315 × 111
Size of UV module	mm	560 × 170 × 110	780 × 170 × 110	1060 × 170 × 110	1508 × 170 × 160
Irradiance in 20 mm distance	mW/cm ²	65	65	65	65
Installed power (Power input)	watt	430	550	740	1800

In all 2-lamp UV modules, ventilation hoses can be installed either at the wide rear side of the UV modules (Fig. 1) or at the top at the narrow side (Fig. 2). On the UV modules marked with an "S", the connections are located at the long, narrow side.



Technical data of Premium systems with 6 lamps

UV module type	Unit	P6036.30	P6062.30
Radiation exit area (size of window)	mm	367 × 298	615 × 298
Size of UV module	mm	550 × 360 × 155	780 × 360 × 155
Irradiance in 20 mm distance	mW/cm ²	90	90
Installed power (Power input)	watt	900	1400



Technical data of Premium systems with 8 lamps

UV module type	Unit	P8062.38	P8087.38
Radiation exit area (size of window)	mm	615 × 372	865 × 372
Size of UV module	mm	780 × 434 × 155	1030 × 434 × 155
Irradiance in 20 mm distance	mW/cm ²	103	103
Installed power (Power input)	watt	2500	2700



UV modules with 2, 6 or 8 lamps can be operated with one control module.



The Heraeus Noblelight Business Line, Ultraviolet (Global Business Unit specialty light sources), specializes in the design and manufacture of UV lamps and modules. For many years the innovation leader, we realize UV process solutions and manufacture several hundred thousand UV lamps each year. Over 90% of these are designed to customer specific requirements.

Benefit from our expertise. Work closely with our applications-oriented sales managers and R&D experts to optimize your processes. You have easy access to our in-house Applications Competence Center (ACC) and the capabilities of one of the most modern, independent UV measurement laboratories in the lamp industry. Our experience means we certify the reliability of our UV systems.

Unrivalled, stable UV efficiencies over the complete lamp operating life guarantee you maximum productivity at minimum operating cost.

The tradition of manufacturing specialty light sources goes back to 1904 when Heraeus invented the UV lamp, and the 1950s when the company paved the way for infrared technology. Today, Heraeus Noblelight employs over 900 staff and runs its own subsidiaries in many countries worldwide.

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