



**Infrared Heat for Disinfection
in the Food Industry**

Carbon Infrared Emitters Disinfect Quickly and Reliably



Carbon infrared emitters
disinfect baking trays and equipment.



All baking trays, conveyors and baking equipment in a bakery must be hygienically perfect at all times. The elimination of mildew and fungal growth is always the first priority. Carbon infrared emitters CIR® from Heraeus Noblelight disinfect simply, quickly and safely. That saves time, energy and costs.

Infrared radiation transfers large amounts of energy in a very short time. Infrared disinfection is thermal disinfection, using controlled heat. The emitters direct their heat precisely where it is required and for only as long as needed. That prevents equipment as well as the baked goods from heat damage.

A study* at the Bremerhaven Institute for Food Technology and Bioprocess Technology in October 2005 showed that carbon infrared emitters kill germs reliably and practically. In addition, thick spore layers, porous surfaces and dust particles pose no problem to the effectiveness of carbon infrared. The deep-acting carbon infrared radiation even penetrates porous materials and multi-layer germ deposits.

Cost-effective disinfection

Disinfection with carbon infrared emitters is reliable and practical. The efficient emitters help to save time and operating costs in bakery plants.

Extended maintenance intervals

Infrared heat also dries the carrying cloths used in bakeries. As a result, the useful life of these carrying cloths is significantly extended, considerably reducing replacement costs. This saves maintenance costs and time, especially when a bakery plant is operated around the clock.

Requirements met

The studies showed that baking trays are disinfected by carbon infrared emitters at just 130–140 °C in less than 30 seconds. Depending on the emitter power, the humidity and the desired speed, the germ reduction is achieved within 10 to 30 seconds between 120 and 160°C. By the use of carbon infrared emitters the requirements of the EU hygiene regulations can be met.

The Technology

Carbon infrared emitters CIR® combine the highly effective heat radiation in the medium wave range with the ability to provide sufficiently high power densities. Response times of the order of seconds provide for extremely good controllability. Consequently, heat is applied for only as long as required. Drying and disinfection cycles can be programmed and, in the event of a conveyor belt stoppage, overheating of the baked items or the baking plant itself is prevented. The compact construction of an infrared system also allows retrofitting of infrared disinfection into existing machinery.

Baked rolls can be disinfected immediately before packing by a short heating of the surface.

This extends shelf life and keeps the rolls fresh for longer.



Practically-based Tests

Experience has shown that it is beneficial to test the material and application in conditions as near to those found in practice as possible. So the optimum emitter for the heating process can be determined. Heraeus Nobelight has established Applications Centres to gather new knowledge through investigation and to share experiences with customers. Only when you know and understand the different applications can you use infrared productively.

Technically qualified personnel carry out the tests. Customers can bring along their own materials and have access to an extensive results database, with over 500 documented tests with food to provide design reference points. IR test modules are also available to allow on-site tests to be carried out at customers' own premises.

* „Wirksamkeit von IR-Strahlungswärme auf die Keimreduzierung von Gärutträgern“, www.hs-bremerhaven.de

Carbon Infrared Heaters for

- Disinfection of baking trays
- Disinfection of transport materials
- Disinfection of baked goods before packing
- Reliable disinfection, even for porous surfaces
- Easy fitting and handling

Technical data

	Carbon Twin	Carbon round tube
Power	80 W/cm	40 W/cm
Max. heated length	3000 mm	1500 mm
Cross section	34 x 14 mm	19 mm
Filament temperature	1200 °C	1200 °C
Wavelength	2 μm	2 μm
Max. power	150 kW/m ²	100 kW/m ²
Response time	1-2 sec	1-2 sec

Carbon Twin Carbon round tube



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