



Carbon Infrared heaters browning ready meals

A specially-built oven system, incorporating the latest carbon infrared technology, is helping Geest to achieve perfect browning of the toppings for a range of oven-ready meals produced at its Milton Keynes food factory. When Geest decided to install a new production line to produce a new range of products at Milton Keynes, it was agreed that this would be designed to include the most up-to-date food production technology. An essential part of the mass production of some ready meals is the browning of the topping, as this is very important for final presentation. Historically, browning has been achieved by means of steam or hot air convection ovens or by infrared equipment such as long wave radiant heaters and electric panel heaters. All of these technologies have a large footprint and tend to have a cooking effect on the product when only surface browning is required. They can also be difficult to maintain and are not very energy-efficient.

To ensure that the technology for browning toppings matched the state-of-the-art technology of the rest of the new line, Geest contacted specialists Protech Food Systems, of Bedford, who designed and installed a complete oven system, incorporating carbon infrared heater modules, exhaust modules and the relevant control system from Heraeus Noblelight. Carbon infrared is ideal for applications in the food industry, such as surface browning, as it delivers medium wave infrared radiation, which is perfectly suited to evaporating water from products, at a very high power density. This ensures that the surface of the food product rapidly achieves a sufficient temperature to drive away any local moisture and then causes browning without heating the body of the product. This allows the subsequent chilling operation to be carried out as energy-efficiently as possible.

Since installation, the new, compact oven system has proved reliable in operation, with minimum maintenance requirements. It is also energy efficient and clean and, as there is no conductive or convective heating, the working environment around the oven is very comfortable. Furthermore, the virtual instant response of the carbon emitters means that they can be switched off very quickly in the event of unexpected line stoppage and there is no need for lengthy pre-heat times to ensure that the oven reaches its operating temperature before starting the line.



Features

- quick surface browning without a cooking effect on the product
- quick response of heaters, no need for pre-heating

Technical Data

- two 40kW carbon medium wave modules
- three exhaust cassettes to provide balance to the system
- Control is effected in two zones, one simple on/off, the other by two thyristors

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