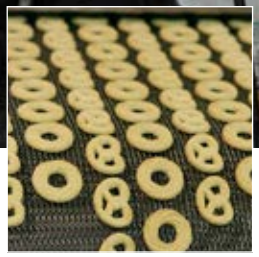
DIAS Infrared Systems

Process monitoring in industrial bakeries

with stationary thermal imaging cameras PYROVIEW



The problem

Automation in industrial bakeries means increased productivity through savings in time and personnel. At the same time, automation makes physically demanding work easier. The decisive factor for success is consistent product quality of the baked goods.

In a industrial bakery, the dough pieces are no longer portioned, shaped and pushed into and out of the oven by hand. Today, this is largely done by robots. It can happen that baked goods or parts of them remain in the continuous oven and go through several baking cycles. If these parts are then transported out of the oven on the conveyor belt, they are not only burned, but due to the excessive temperature they can also burn, anneal strongly or outgas and damage the conveyor belts in the process.

The solution

In order to minimize this risk, the use of stationary thermal imaging cameras PYROVIEW for non-contact temperature measurement together with special software makes economic sense. The cameras detect impermissibly high temperatures so that damaged baked goods can be recognized in good time, sorted out and, if necessary, deleted.

The system

The system for large bakeries consists of the thermal imaging camera PYROVIEW 380L/640L protection in an IP65 stainless steel housing (image 1), a control box with touch PC and PLC (image 2) and all necessary accessories (e.g. cables, brackets) – but it can be completely customized or extended. The PYROSOFT FDS software runs on the touch PC mounted in the control box and visualizes the status of the system. Alarm data including all video streams are recorded, stored and can be used for tracking and evaluation.

The PYROVIEW thermal imaging camera uses hotspot detection to detect whether a hazard is present or not and forwards an alarm signal to the PLC. The threshold values for the hotspots can be individually set and programmed. The system can thus also be adapted to different grades and batches. A traffic light system (red/green) and an additional signal horn (image 2) indicate the current system status so that the machine operator or other personnel can intervene quickly if necessary. In addition, the temperatures of the baked goods can be monitored directly. Temperature deviations are directly transmitted to the PLC of the baking oven. An existing spray device (image 3) can also be coupled to the system's PLC. In the event of an alarm, the water flow of the device is increased so that burning or excessively hot baked goods are immediately extinguished.

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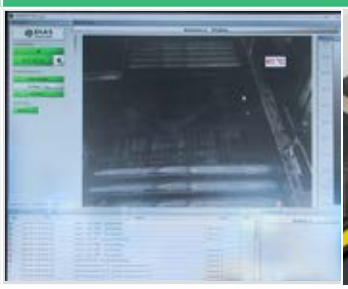
Image 1:
Installed PYROVIEW infrared camera

Image 2:
Control box with touch computer, PLC and signal light

Image 3:
Spray device

System components (individual configurable)

Infrared camera PYROVIEW 380L/640L	Control box with touch computer, software PYROSOFT and PLC		Customer support
			· individual planning and realization · commissioning on site and instruction of personnel · system maintenance

Device type	Measuring temperature range	Spectral range	Sensor	Resolution	Interface	Optics
PYROVIEW 380L protection	–20 °C to 120 °C, 50 °C to 500 °C	8 µm to 14 µm	Micro bolometer array	384 × 288 Pixel	Ethernet (real-time, 50 Hz)	with motor focus
PYROVIEW 640L protection				640 × 480 Pixel		

Do you have any questions regarding our thermal imaging cameras PYROVIEW or any other request?
We will be happy to advise you without obligation: **Email: sales@dias-infrared.de, phone: +49 351 896 74 10**

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