FLIR Systems ThermoVision™ infrared camera helps resistor manufacturer achieve 100% quality control

Located in Dillenburg near Frankfurt, Germany, ISABELLENHUTTE is a manufacturer of resistance alloys for thermocouples, extension leads and passive electrical components. These components are used by the automobile industry in engine pumps and other electronic devices. The company has a deserved international reputation for the high quality of its products. In order to achieve and maintain the high standards of quality expected by its customers worldwide, the company invests heavily in quality control and research and development.

Despite their investment in these areas, ISABELLENHUTTE’s customers were still reporting a failure rate of 1 in 1000 pieces with regard to the resistors produced. By ISABELLENHUTTE’s exacting standards, even a failure rate of 0.1% was considered unacceptable. The company wanted to deliver a perfect product to its customers. This could only be achieved by checking each individual resistor and by obtaining 100% quality control.

Infrared: the key to success

The solution to their problem was to install a FLIR Systems ThermoVision infrared camera to “look” at every resistor produced. Within a timeframe of less than 3 seconds, the ThermoVision infrared camera checks the resistor for possible defects and decides whether it is perfect or not. As problem areas have a higher surface temperature, they can be detected as hot spots.

Every resistor is charged for a very short period of time. Within 20 milliseconds, the ThermoVision takes a snapshot. With the help of machine vision software, the ThermoVision compares the maximal detected temperature (TMax) with the average surface temperature (TAvg) of the resistor. If the difference between TMax and TAvg exceeds a threshold value, a hot spot is detected. When this happens, a TTL-signal marks the resistor as defective, and it is removed from the production line. The whole process takes only 3 seconds from the entry to the exit of the testing machine. The infrared image, showing the hot spot, is stored so as to enable statistical analysis of production.
Quality Control: 100%

"Infrared thermography and, in particular, the FLIR Systems ThermoVision camera, proved to be the perfect way to ensure that our quality standards are even higher than before." Says Mr. Eichman, Quality Manager at ISABELLENHUTTE. "We now monitor our production 24 hours a day. As we no longer need an operator to do this, we are saving money. Our initial investment in the ThermoVision camera repaid itself within an extremely short period of time, and, what is more, each and every resistor is now checked, allowing us to deliver a perfect product to our customers."

It goes without saying that ISABELLENHUTTE’s efforts to deliver a perfect product are highly appreciated by their demanding customers, ensuring that they remain a leading company in their sector.