

Accelerate research and development with the testo 890 thermal imager.



In order to remain competitive in the global economy, companies must launch better and better products on the market at shorter and shorter intervals. This has far-reaching consequences for research and development departments which design and implement the new products and ultimately ensure their market readiness. In order to enable development to progress faster while at the same time maintaining consistent quality, problem areas must be detected at an early stage, comprehensively analyzed and effectively optimized. Thermal imagers have established

themselves as standard measuring instruments in this area for the analysis of thermal processes. They enable fast, non-contact and non-destructive measurements and thus make a significant contribution to the acceleration of testing and development processes.

Its high infrared resolution, its outstanding thermal sensitivity and its numerous functions for analysis and documentation mean the testo 890 thermal imager is ideally suited for use in research and development - both in electronics and in plastic injection moulding.

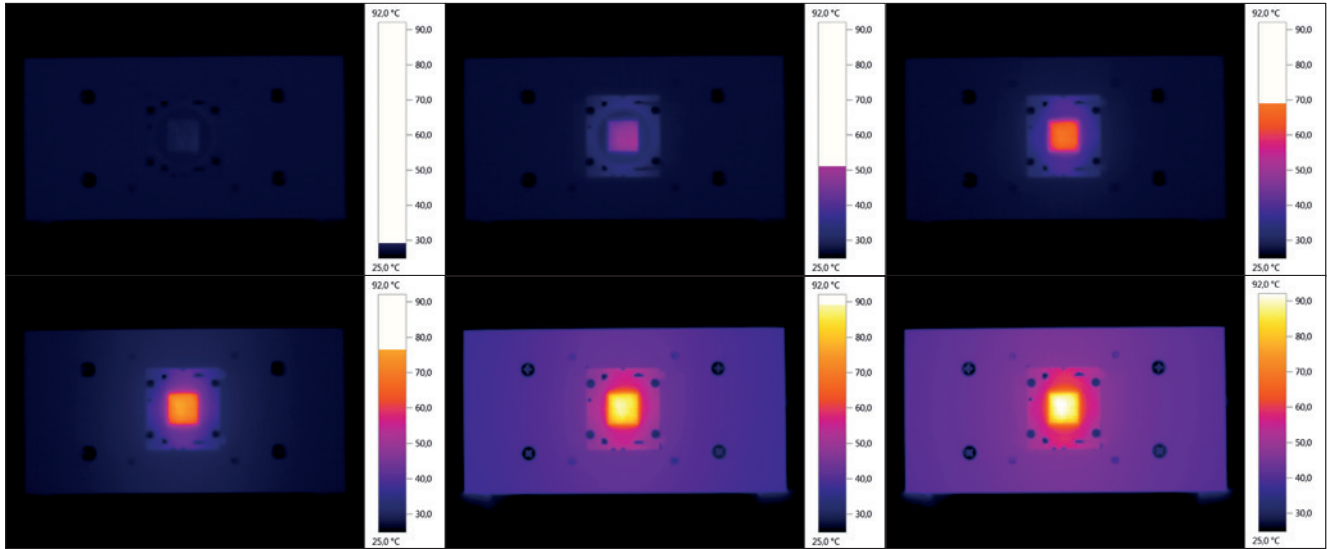


Image sequence recording of an LED on a heat sink. testo 890 visualizes the temperature development quickly and easily over time.

The challenge ...

The increasing pressure to innovate means that research and development departments all over the world face the challenge of accelerating the development times for new products, without making any compromises in terms of quality and safety in the process. So that continuous improvement of products can be ensured, they have to be precisely monitored and comprehensively analyzed at defined stages of the process. A thermal imager is the measuring instrument of choice for all products in which heat develops during operation or production.

... in electronics

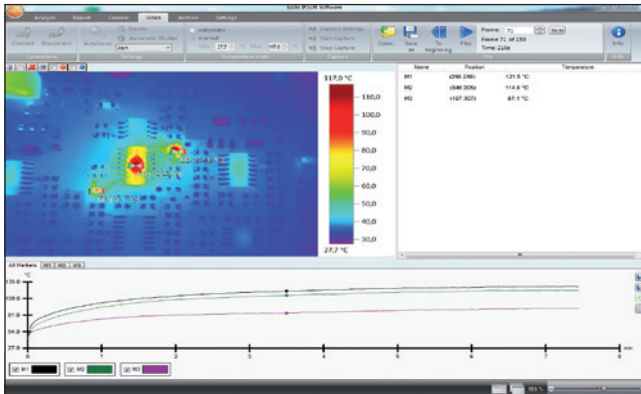
Manufacturing sizes are shrinking, components are getting smaller and smaller, the packing density on circuit boards is constantly increasing and at the same time the performance of the products is rising – no matter whether this involves the luminous efficiency of LEDs or the computing power of smartphone processors. Heat development plays an important role here in electronics, because small components give off large amounts of heat and can thus impair the function of adjacent assemblies or even the whole circuit. In order to be able to achieve the best possible arrangement of components on the circuit board and sufficient dimensioning of the cooling equipment, it is a case of achieving the finest possible resolution of the structures and components and monitoring the heat development of the product over a significant period of time and in different operating conditions.

... in the plastics processing industry

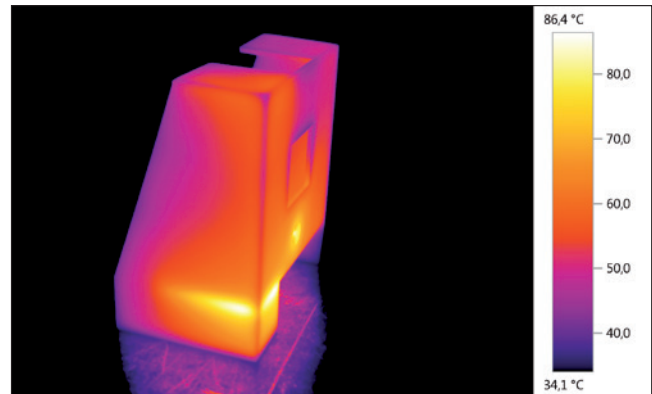
When manufacturing plastic parts with injection moulding machines, moulding tools have to be developed which achieve optimum product quality in the shortest possible cycle times. In this respect, it must be possible to control the temperature of the tool to ensure temperature distribution is as consistent as possible during the injection of the parts, in order to avoid weld lines or injection omissions. The temperatures must also be monitored during removal from the mould and the subsequent cooling phase, in order to test the moulded item for distortions or stretching. In addition, very fine faults, such as moulding lines and air pockets have to be reliably and precisely detected.

... for documentation

In most cases, detailed examinations of temperature developments generate very large quantities of data, with often only a fraction of these being relevant for the testing and development process. Despite this, all the data have to be examined conscientiously, in order to detect all anomalies properly. A great deal of time is therefore wasted in searching which could be better spent elsewhere.



The professional IRSoft analysis software enables the heating process of several components on one board to be displayed in parallel in a temperature-time diagram.



Plastic component with striking heat distribution in the lower part. The excessively hot spots can be traced back to insufficient cooling of a core part in the injection moulding machine tool.

The solution ...

Its high-quality equipment, its versatile functions and its intuitive operation make the testo 890 thermal imager the ideal measurement tool for visualizing all thermal processes in research and development and thus accelerating the product development process.

... for the precise detection of the smallest faults

The high-resolution infrared detector with 640 x 480 pixels and a focusing distance of less than 10 cm enable precise consideration of all components. The intelligent interplay of the system components enables even small components and fine structures to be monitored to a size of 113 µm mathematically – a precision which is currently unique on the market.

And the resolution can be improved even more if the camera is held in the hand. The patented SuperResolution Technology enables the testo 890 to capture several images one after the other in rapid succession. Using an algorithm, these are then compiled into a single thermal image with four times the number of measuring values. Extremely high resolution images are then available when subsequently viewing the data in the professional IRSoft analysis software.

... for the analysis of heat development as a time progression

If it is important to monitor the progression of temperatures over a specific time period, the testo 890 can also record radiometric image sequences which enable you to analyze the temperature in the thermal image for each point in time

during the course of the measurement and at each position of the measurement object. That saves valuable time in terms of identifying thermal anomalies.

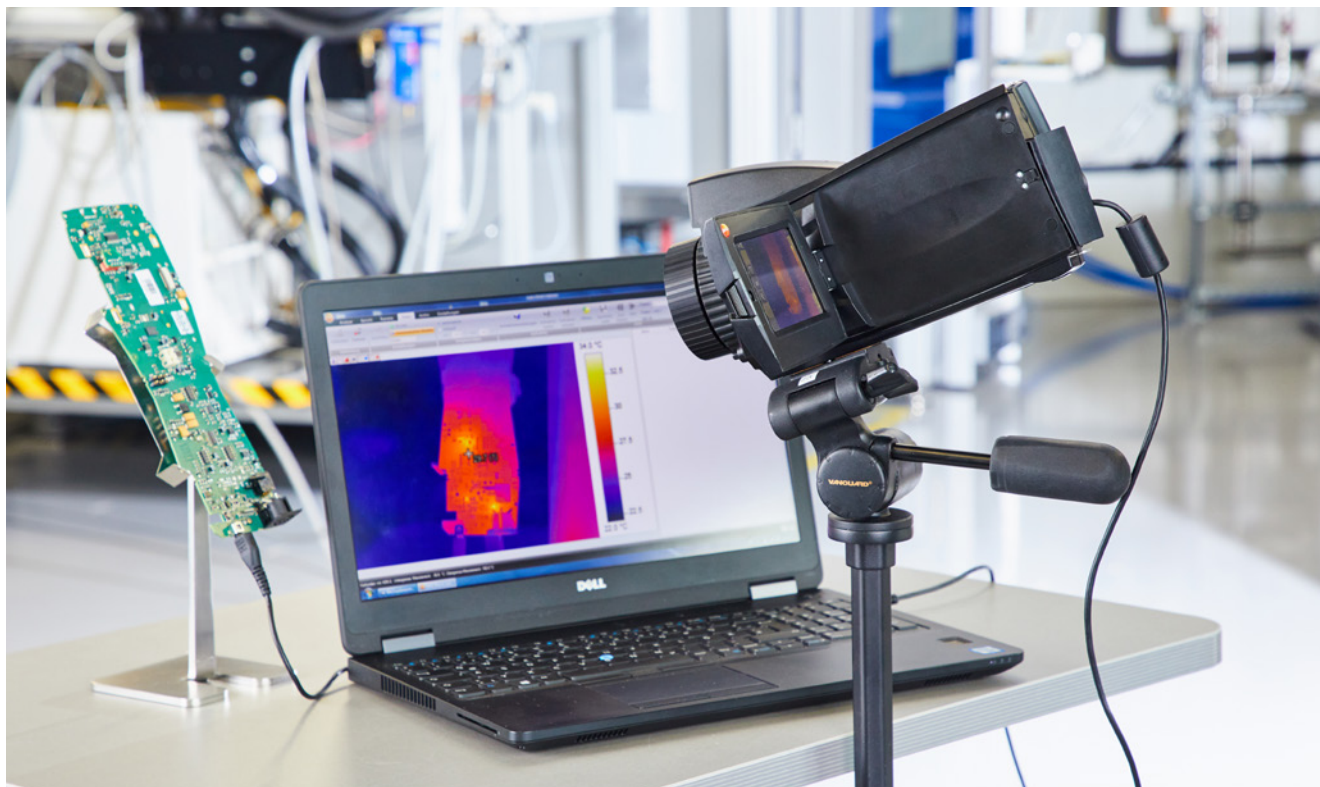
The recording is made at individually configurable intervals and can be started manually or after a timer countdown. Once the measurement is complete, the recorded sequences can easily be examined on the PC using the professional IRSoft analysis software.

For more extensive test set-ups, the testo 890 can also be connected directly to a PC via a USB interface. This enables direct video streaming using the "fully radiometric video measurement" IRSoft function, offering a higher image capture rate of up to 25 Hz.

In order to evaluate temperature developments as a time progression, you can display measuring points and profile lines as a temperature-time diagram and export them as a graphic or Excel file.

... for data-minimizing documentation

If the testo 890 is not intended to start recording until after a specific temperature value has been exceeded, the trigger based on a limit value can be used. It automatically triggers the recording once the previously determined limit value has been exceeded and so only records data which are also actually relevant for testing and optimization. This means it not only saves memory, but also valuable time, because time-consuming viewing of irrelevant measurement data is no longer needed.



The advantages at a glance.

The testo 890 thermal imager helps you to significantly accelerate your measuring and testing tasks in research and development. With the testo 890, you can very easily ...

- visualize thermal processes with high resolution and analyze them
- capture image sequences directly with the camera and process them on the PC with testo IRSofT
- transfer measuring values from the thermal images to temperature-time diagrams and export them as images or Excel sheets
- control the recording using triggers based on limit values and thus significantly reduce the amount of data needing to be checked



testo 890 thermal imager