

**Noncontact infrared
temperature measurement**

 **optris**
infrared thermometers





The Optris team

Optris GmbH – Profile of the company

With the opening of Optris we aim at adding innovative measuring and application principles to the wide range of noncontact temperature sensors.

We derive our ideas from 15 years of experience and accumulated knowledge of engineers and physicists acquired in the development, production and sales of infrared temperature instrumentation. On this basis and in combination with a high investment rate we provide progressive technology which enables us to satisfy all the requirements of our customers.



Presentation of new projects of Optris
Mr. Karl Wisspeintner, CEO of Micro-Epsilon and Mr. Ulrich Kienitz, CEO of Optris

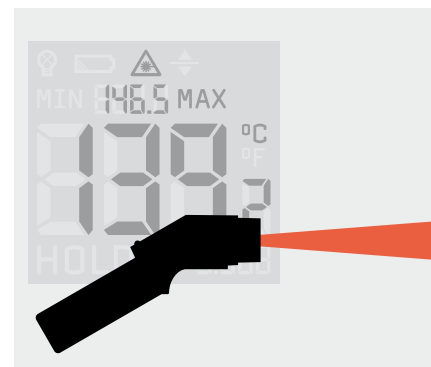
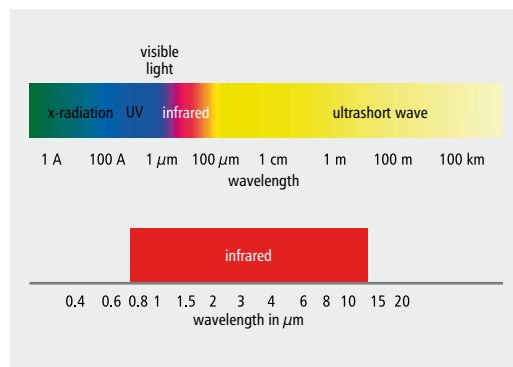
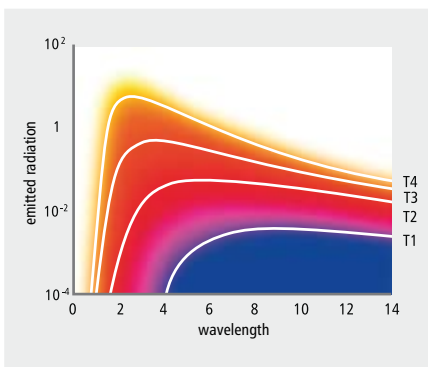
The strategic partnership with the Micro Epsilon Group - which is already active with measuring sensors worldwide - offers completely new synergies in the field of sensor technology.

Representatives and exclusive distributors support the product sales and guarantee a qualified and international customer service.

We greatly stress a constant training of our sales partners by regular product and application courses and the establishment of local calibration laboratories.

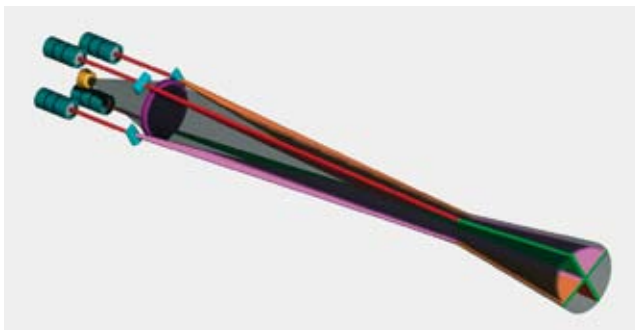
The world of non contact temperature measurement

Next to time, temperature is the most frequently measured physical quantity. On the basis of Planck's and Boltzmann's Radiation Laws infrared thermometers determine the temperature of objects by noncontact measurements of the infrared radiation emitted by objects. A detector converts the incoming infrared radiation into an electrical signal. This results in an amplified and linearized temperature value, which can be used for further processing. The use of either portable or online infrared thermometry sensors opens up various opportunities to measure and display temperature processes in the fields of quality control, automation systems and maintenance of machines and plants. Noncontact temperature sensors are designed not only to check moving or inaccessible objects, but to allow quick and non-reactive measurements.

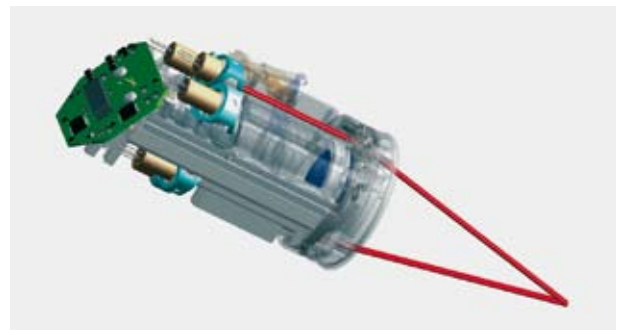


Development of new technologies

We guarantee an efficient and market-focused technology development due to our accumulated experience of 140 engineer-years. Our strength results from our competence to provide our customers with solutions for even the most complicated requests combined with a wide and innovative range of products. New measurement principles and sighting techniques support an increasingly precise use of infrared temperature measurement devices.



Development of high – performance optics combined with cross laser sighting



Close focus with a spot size of 1 mm and laser sighting for the measurement of smallest structures.

Our product line

Noncontact temperature measurement with infrared thermometers proves to be a highly qualified way of controlling and assessing process temperatures. Furthermore, infrared thermometry has become a part in the maintenance of machines and plants.

The wide range of choice and technical adjustment of infrared thermometers to the measurement problem, allow us easily to upgrade existing production plants as well as the design of equipment for new plants.



Handheld series

High grade handheld thermometers with USB interface for demanding users

- Temperature ranges from -35°C to 900°C
- **New:** laser crosshairs and option to switch into close focus mode for detection of smallest objects with the size of 1 mm at a distance of 62 mm
- Spectral response: $8\ \mu\text{m}$ - $14\ \mu\text{m}$
- Signal processing, emissivity, peak hold, valley hold, average value adjustable
- Input for thermocouple available
- On Board memory to store up to 100 data points, digital interface USB and graphic and display software
- Software with oscilloscope function for 20 measurements per second



Infrared camera series

Infrared camera for online applications

- High accuracy within temperature ranges of -20°C up to 900°C
- Easy to use – small size
- Excellent thermal sensitivity (NETD) of 0.08 K
- Exchangeable lenses with 9° FOV and 31° FOV
- Real time thermography with 100 Hz frame rate
- USB 2.0 interface, USB powered device
- 1 m, 5 m or 20 m cable length
- Software **PI Connect** (Windows XP/Vista)
- Analog input and output, trigger interface
- Extremely light weighted (250 g) and rugged (IP65)
- Size 45 mm x 45 mm x 62 mm

With a wide variety of industrial interfaces including RS232, USB, RS485, Profibus, CAN-Bus and Ethernet to choose from as well as the traditional analogue and thermocouple signals for data output, these products support direct implementation into any control system. Handheld infrared thermometers are showing the temperature readings direct on a LCD display.



Compact series

Small programmable compact infrared temperature instruments for manifold industrial applications

- Temperature measurement from -40°C up to 1800°C
- Analog outputs: 0/4-20 mA, 0-5 V, 0-10 V
- Thermocouple type J or K
- Wavelength range from $0.9\ \mu\text{m}$, $1.6\ \mu\text{m}$ up to $2.3\ \mu\text{m}$ for measurements in metal processing and semiconductors
- Wavelength range of $5.1\ \mu\text{m}$ for temperature measurements on glass
- Wavelength range from $8\ \mu\text{m}$ up to $14\ \mu\text{m}$ for general measurements from -40°C up to 900°C
- Optical resolutions from 2:1 up to 75:1
- Programmable peak hold, valley hold, average and emissivity adjustment
- Digital interfaces optional: USB, RS485, RS232 interface, CAN-Bus, Profibus DP and Ethernet
- Software **Compact Connect**
- Large range of accessories for mounting and air purging



High performance series

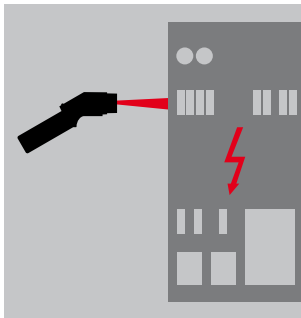
High performance infrared temperature instruments, fibre optic and fibre optic ratio pyrometers

- Temperature measurement from -40°C up to 1800°C
- double laser aiming marks real spot location and spot size at any distance.
- Analog outputs: 0/4-20 mA, 0-5 V, 0-10 V
- Thermocouple type J or K
- Wavelength range from $0.9\ \mu\text{m}$, $1.6\ \mu\text{m}$ up to $2.3\ \mu\text{m}$ for measurements in metal processing and semiconductors
- Wavelength range from $5.1\ \mu\text{m}$ for temperature measurements on glass
- Wavelength range from $8\ \mu\text{m}$ up to $14\ \mu\text{m}$ for general measurements from -40°C up to 900°C
- Optical resolutions from 75:1 up to 300:1
- Programmable peak hold, valley hold, average and emissivity adjustment
- Digital interfaces optional: USB, RS485, RS232 interface, CAN-Bus, Profibus DP and Ethernet
- Software **Compact Connect**
- Accessories for mounting, cooling and air purging

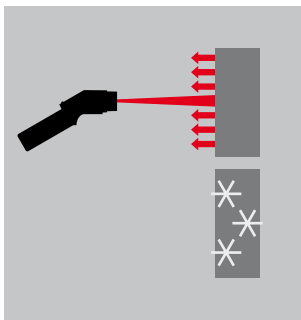
Applications and solutions

The temperatures generated within a process and the product temperatures themselves are of fundamental importance in a large number of industrial processes.

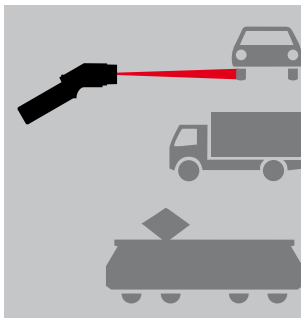
The following pictures clearly illustrate the broad scope of infrared temperature instruments in the field of metal, glass and plastics processing and the latest laser processing methods. Infrared thermometers support a high quality level in the production process.



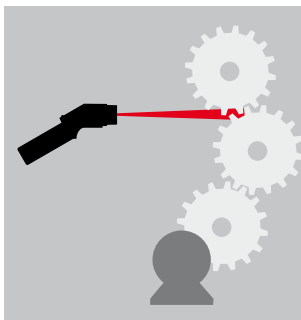
Temperature measurement for inspection and maintenance purposes of electrical plants
Recommended instruments:
optris LS, Infrared camera



Temperature measurement for inspection and maintenance purposes of heating and air conditioning equipment
Recommended instruments:
optris LS, Infrared camera

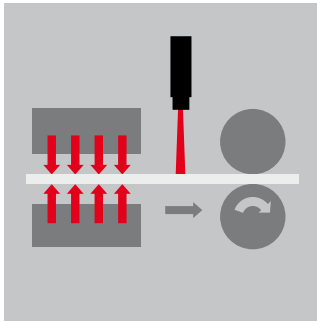


Checking for hot spots in diesel and internal combustion engines, catalytic converters, brake systems and components of air conditioning systems
Recommended instruments:
optris LS, Infrared camera

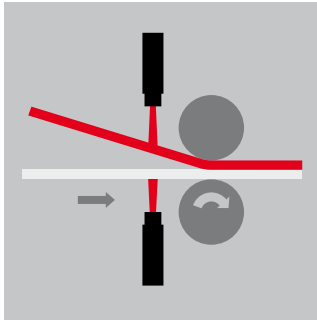


Temperature measurements for inspection and maintenance purposes of engines, gear units
Recommended instruments:
optris LS, Infrared camera

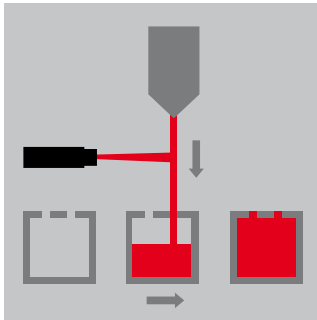
noncontact temperature measurement



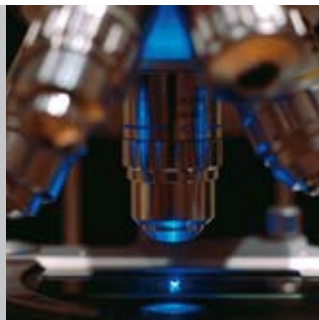
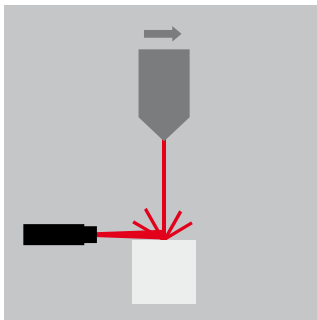
Monitoring temperatures of smoothing and embossing calenders
Recommended instruments:
optris CT, optris CTlaser



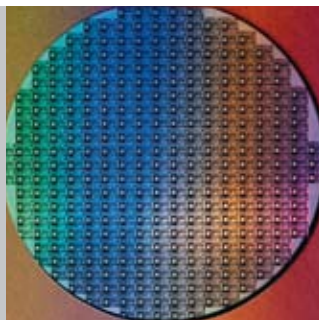
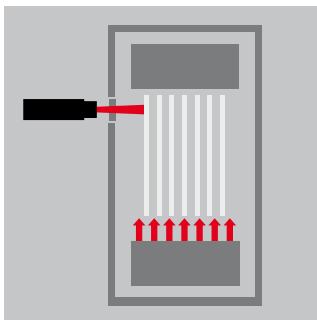
Monitoring temperatures of film extrusion and lamination processes
Recommended instruments:
optris CT, optris CTlaser



Monitoring metal extrusion in casting facilities
Recommended instruments:
optris CT 1M/2M, optris CTlaser 1M/2M



Measuring temperatures in laser welding and laser cutting processes
Recommended instruments:
optris CT 1M/2M, optris CTlaser 1M/2M



Measuring temperatures of wafers in the field of semiconductor production, for instance during photoresist removal
Recommended instruments:
optris CT

www.optris.com



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