Noncontact Temperature Measurement
Infrared Solutions for the Steel Industry
Accurate and reliable temperature measurement is a part of efficient metal processing and steel manufacturing. Incorrect temperature during the metallurgical process results in poor quality steel products, waste, extra energy consumption, increased refractory wear, surface defects, and time lost due to inaccurate temperature monitoring and control.

The rugged and dependable non-contact infrared pyrometers of Raytek and Ircon are suitable for fixed installation in plants and machines and can be integrated into process-monitoring systems via industry-specific interfaces. They allow accurate temperature measurement of metal processing even in the rough environmental conditions present during primary and secondary metal production, such as smoke, steam, dust or intermittent interferences, including scale or water.

The Raytek and Ircon solutions take temperature measurement one step further. Simultaneous analog and digital output allows temperature data to be integrated into a closed loop control system and simultaneously output for remote temperature monitoring and analysis. Raytek and Ircon sensors, with digital electronics and 2-way communications, can be configured remotely from the safety of the control room. The result: increased functionality and greater control.

A wide range of optics, including a remote-controlled, motorized variable focus option on some models, covers an enormous variety of applications. This is supported by integrated through-the-lens sighting, plus either laser or video sighting for correct target location.

With Raytek and Ircon sensors, factory operators can control the temperature of their process, resulting in significant energy and time savings, as well as increased safety, productivity and product quality.

Every step in the steel manufacturing process can benefit from the use of infrared thermometers.

Proven Technology
Thousands of customers choose Raytek and Ircon and continue to rely on our instruments to help maximize the potential of their industrial processes. Many of them are industry leaders like Arcelor Mittal, Mittal Steel, Saarstahl, Dillinger Hütte, Salzgitter, Voest Alpine, Severstal, Tata Steel, China Steel, Hyundai Steel, Volkswagen, Saint Gobain, Tetrapak ... *

Renowned Experts
As technical experts, Raytek and Ircon specialists provide training seminars and webinars on the basics of infrared thermometry, as well installation, maintenance and how to improve steel manufacturing processes. A big part of our success is based on our close cooperation with our customers to develop instruments that solve even the most difficult applications.

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Find the Right Products for Your Applications

Does your online application require that you measure a point, a line, or an area?

**Point**

**Line**

**Area**

Raytek & Ircon – Complete IR Solutions for the Steel Industry

Raytek and Ircon offer the broadest range of IR solutions for noncontact temperature measurement, including fixed infrared point sensors, infrared linescanners and thermal imagers. Powerful software and a full line of dedicated accessories complete the offering.

**Raytek Sensors**

Wide range of versatile infrared solutions for demanding applications

**Ircon Sensors**

Wide range of rugged infrared solutions for harsh high-temperature applications
Dedicated Infrared Solutions*

Primary Steel

Common Applications

- **Raw Materials for Steel Production**  
  (Sinter and Coke Plants)  
  Monitoring temperatures of iron ore, lime, coal and coke insures that the basic raw materials have achieved the right characteristics and prevents critical conveyor belts from being damaged.

- **Steelmaking – Blast Furnace**  
  Stove dome: Thermal scans prevent overheating and premature damage to the refractory bricks.  
  Molten iron: Temperature monitoring during tapping ensures continuous feedback and product uniformity.  
  Torpedo car: Linescanning finds refractory failures and avoids costly and dangerous metal spills.

- **Continuous Casting**  
  Use infrared thermometers to accurately gauge cooling requirements of slabs, billets, or blooms to ensure product uniformity throughout, and provide equipment operators with immediate temperature information vital to the cooling process.

- **Heat Treating**  
  Ratio IR thermometers allow accurate temperature measurement of parts often obscured by smoke, steam, and quench oil in an EMI environment. Factory operators can selectively control temperature measurement of heat treated parts, resulting in significant energy and time savings.

- **Tube / Pipe Mills**  
  Welded tube relies on accurate measurement of weld seam temperatures to insure 100% integrity of the seal and prevent bad or low quality tubing. Monitoring the billet temperature in pipe mills allows the operator to adjust rollers, which results in reduced process downtime.

*These are a few examples of how IR sensors are used in several common applications. Note that our product recommendations are based on the most common applications. For specific needs, please contact our application specialists.
Dedicated Infrared Solutions*

Secondary Steel

Common Applications

- **Rolling Mills**
  Infrared temperature sensors accurately measure strip and sheet temperature so that rolling mill stands can be efficiently set to match the steel’s temperature. IR sensors can also be used to detect the presence of hot metal to accurately time roll stand operation.

- **Rod/Wire Mills**
  Thermal scans of billet exit temperatures allows the operator to adjust rollers and reduce process downtime. Sensors mounted at the layering area control cooling of overlapping coils to improve product quality.

- **Forging**
  Monitoring temperature reduces heating costs by preventing billet overheating and reduces machine and die maintenance by identifying under heated billets before working.

- **Galvanizing and Annealing Lines**
  During the production of galvanized or annealed steel, the metal is heated to very critical temperatures to insure proper bonding of the galvanized coating or annealing of the metal. The steel is measured in the preheat, heat, soak and cooling zones to insure proper metallurgical properties.

- **Metal Coating**
  Metal used for building siding, roofing and gutters, as well as metal for appliances are all coil-coated. The paint is applied to continuous coils of metal using rollers and then heated in a hot air oven. The temperature is critical to insure proper bonding and color. In the production of reinforcing bars for the construction industry, the bars are preheated and then the coating is applied and cured. The proper temperature is critical to insure correct thickness and good bonding of the coating.

- **Steel Coating**
  Sheet temperatures can be monitored before and after coating to insure the coating will bond and have the desired thickness.

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The Company

Raytek® a Fluke® Company
Founded in 1963 in California/USA, Raytek develops, manufactures, distributes, and services a complete line of infrared solutions for noncontact temperature measurement within a range from -50 to 3500 °C (-50°F to 6500°F) in industrial processes.

1991 Raytek opened its European Headquarters in Berlin / Germany.
2002 Raytek became a part of Fluke Corporation, a leading manufacturer of electronic measurement devices, owned by U.S.-based Danaher Corporation.
2007 Raytek was joined by IRCON®. In business since 1962, Ircon is the world’s most trusted name for rugged, dependable, noncontact, fixed temperature measurement and the brand of choice for use in the harshest, high temperature industrial environments.
2008 Raytek and Ircon were joined by DATAPAQ®, the worldwide leader in temperature profiling. All three brands are now part of FLUKE.
2013 Raytek hosts DAkkS testing laboratory for the calibration of pyrometers, temperature indicators, and temperature simulators for all brands and spectral ranges.

Our Business Worldwide
Through our global network of qualified distributors, we guarantee flexibility, dedicated local customer support, fast service, and individual application assistance. Three international service centers (USA, Germany and China) provide technical service and calibration support in accordance with ISO9001 quality standards and equipment fully certified and traceable back to DaKKS & other international standards.

Local service and support based on a network of over 50 experienced agents and international sales offices worldwide
Visit www.raytek.com or www.ircon.com to find your local sales office.

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