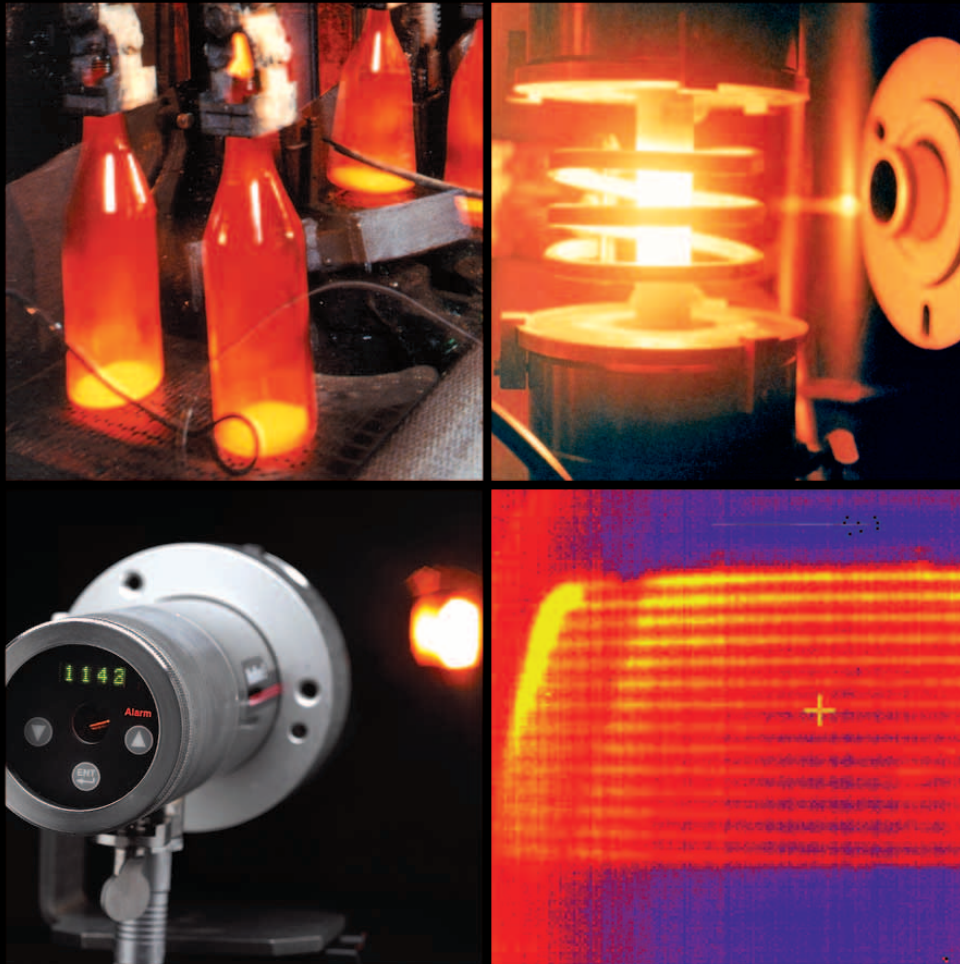


Product Selection Guide



Non-contact Temperature Measurement
Solutions for Industrial Applications



Find the right IRCON products for your application.

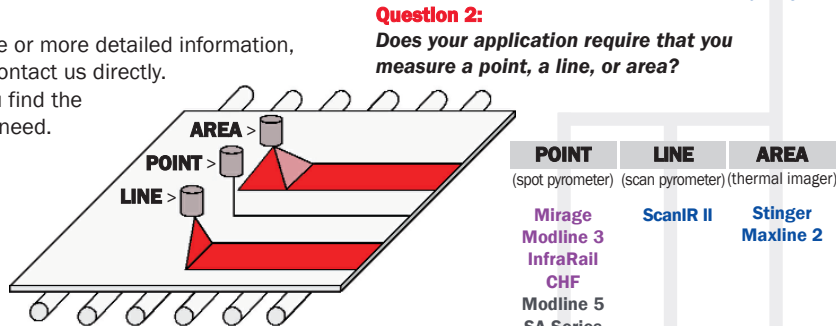
This guide is designed to help you identify IRCON products that meet your temperature monitoring requirements.

IRCON offers products designed to perform accurately and reliably in extremely harsh environments, along with extensive industrial application expertise and support services.

IRCON products include infrared thermal scanning and camera systems, a complete line of infrared thermometers, and comprehensive thermal imaging and analysis software, capable of temperatures spanning -50° to 6500°F (-50° to 3500°C).

If you seek further assistance or more detailed information, please visit our web site or contact us directly. Our expert staff can help you find the IRCON solution ideal to your need.

<http://www.ircon.com>
info@ircon.com



Question 2:
 Does your application require that you measure a point, a line, or area?

- | POINT
(spot pyrometer) | LINE
(scan pyrometer) | AREA
(thermal imager) |
|---|--------------------------|--------------------------|
| Mirage
Modline 3
InfraRail
CHF
Modline 5
SA Series
SR Series
MiniIRT
Modline 4
Javelin | ScanR II | Stinger
Maxline 2 |

- | ON-LINE | PORTABLE |
|---|------------------------------|
| Mirage
Modline 3
InfraRail
CHF
Modline 5
SA Series
SR Series
MiniIRT
Modline 4
Javelin
ScanR II
Stinger
Maxline 2 | Ultimax Plus
digiCam/2-IR |

Question 3:
 Do you prefer a sensor that monitors stand-alone, or do you require broader control capabilities?
 Our stand-alone sensors typically include no external indicator or controller.

- | SYSTEM SENSORS | STAND-ALONE SENSORS |
|---|--|
| Mirage
Modline 3
InfraRail
CHF | Modline 5
SA Series
SR Series
MiniIRT
Modline 4
Javelin |

Question 4:
 Which of the following best fits the process temperature range of the product or material you wish to measure? *

Process Temperature Range:

°F	150 - 6500	75 - 6500	700 - 5000	50 - 525	482 - 5432	500 - 4800	1300 - 6500	-20 - 1800	-50 - 2600	0 - 2400	50 - 4500	-40 - 3200	-4 - 4500	-50 - 5430	32 - 2192	°F
°C	80 - 3500	25 - 3500	375 - 3000	10 - 275	250 - 3000	250 - 2600	700 - 3500	0 - 750	-50 - 1300	-20 - 1300	35 - 2500	-40 - 1760	-20 - 2500	-50 - 3000	0 - 1200	°C
	Mirage	Modline 3	InfraRail	CHF	Modline 5	SA Series	SR Series	MiniIRT	Modline 4	Javelin	ScanR II	Stinger	Maxline 2	Ultimax Plus	digiCam/2-IR	

Question 5:
 What is the minimum or maximum spot size you require? *

Resolution Factor Range:

D/20 to D/300	D/20 to D/300	D/3 to D/300	N/A	D/75 to D/300	D/50 to D/300	D/50 to D/150	D/10	Fixed Focus	D/10 to D/30	D/75 to D/300	Call IRCON	Call IRCON	Call IRCON	Call IRCON
Mirage	Modline 3	InfraRail	CHF	Modline 5	SA Series	SR Series	MiniIRT	Modline 4	Javelin	ScanR II	Stinger	Maxline 2	Ultimax Plus	digiCam/2-IR

Please refer to the center chart for further detail >>

* Please consult with an IRCON product specialist to determine the specific instrument that will meet your requirements.

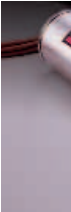
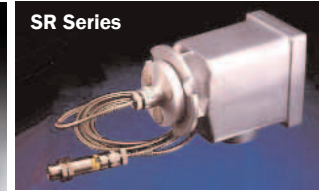
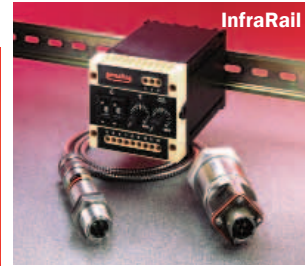
The spot size that the sensing head will measure is determined by the formula $d = D / F$

d = Diameter of spot needed (the area on the target you are needing to measure)

D = Distance from sensing head to target

F = Resolution Factor for sensing head (use the number ranges indicated in chart above)

IRCON Non-Contact Temperature Sensing Products



		Spot Thermometers - Systems (Fixed Position Sensors)				Modline 5	
		Mirage	Modline 3	InfraRail	CHF		
<i>Will your application require a fixed focus or an adjustable focus lens?</i>	Fixed			X			
	Adjustable	X	X	X		X	
<i>What is the response time required for proper control monitoring?</i>	Range in Seconds	0.01 to 10 seconds	0.01 to 60 seconds	0.01 to 10 seconds	1.0 seconds	0.06 to 25 seconds	
<i>What type of output from our sensor does your application / controller require?</i>	Analog	0-10Vdc 4-20 mA	0-10 Vdc 4-20 mA 0-20 mA	4-20 mA	0-10Vdc 4-20 mA	4-20 mA 0-20 mA	
	Serial		RS-485		RS-232	RS-485	
	Video or Still Imagery						
<i>What are the space limitations for mounting the sensor head?</i>	Height x Width x Length in Inches	7.5 H x 5.0 W x 8.625 L	call IRCON	call IRCON	call IRCON	2.24 (diameter) x 8.28 L (without DWD)	5.0
<i>What are space limitations for the indicator / processor?</i>	Height x Width x Length in Inches	8.8 H x 8.8 W x 6.0 L	5.7 H x 7.6 W x 11.0 L	2.9 H x 2.95 W x 5.34 L	Panel Mount: 10.31 H x 2.6 W x 9.35 L Portable: 2.9 H x 11.06 W x 14 L	call IRCON	
<i>Does this product come with or require PC software? (For advanced data trending, thermal imaging or control capabilities. Please refer to software page of this brochure for descriptions.)</i>		No	No	No	No	Yes See description on software page	
<i>What special features will you require?</i>	Adjustable Emissivity	X	X	X	call IRCON	X	
	Peak Picker	X	X	X		X	
	Adjustable Response Time	X	X	X		X	
	Alarm Capabilities	X	X	X		X	
	PID Control		X				
	Panel-Mounted Indicator	X	X		X	X	
	Remote Display (Optional)					DPM or MSI	
Fiber Optic Lens (Optional)	X	X	X				



Spot Thermometers - Stand Alone (Fixed Position Sensors)					Thermal Scanner and Imagers (Fixed Position)			Handheld Portable Units	
SA Series	SR Series	miniIRT	Modline 4	Javelin	ScanIR II	Stinger	Maxline 2	Ultimax Plus	digiCam/2-IR
X	X	X	X	X	X	X	X	X	X
0.01 to 10 seconds	0.1 to 10 seconds	0.15 to 10 seconds	0.15 to 10 seconds	0.165 to 10 seconds	0.02 to 60 seconds	0.017 seconds	0.017 seconds	0.5 to 1.0 seconds	0.1 seconds
4-20 mA 0-20 mA	4-20 mA 0-20 mA	0-10Vdc 4-20 mA J/K Thermo	4-20 mA loop power	0-10 Vdc 4-20 mA	4-20 mA 0-20 mA RS-485	RS-485 Analog or Digital Video (NTSC or PAL)	RS-485 Analog or Digital Video (NTSC or PAL)	0-10 Vdc RS-232	
0 (diameter) x 8.78 L	7.5 H x 5.0 W x 8.625 L	0.62 (diameter) x 1.41 L	3.80 H x 4.0 W x 5.33 L	1.5 H x 1.5 W x 7.8 L	9.16 H x 9.25 W x 13.49 L	3.88 H x 5.0 W x 13.56 L	3 (diameter) x 7 L		Analog Video (NTSC or PAL) Digital Still
call IRCON	call IRCON	1.2 H x 2.6 W x 4.54 L	call IRCON	call IRCON	12.7 H x 15 W x 8.3 L	call IRCON	call IRCON		
No	No	No	No	No	Yes See description on software page	Yes See description on software page	Yes See description on software page	Yes	Yes See description on software page
X	E-slope	X	X	X	X	X	X	X	X
X		X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X					
X	X	X	X	X					

IRCON Product Accessories

IRCON offers a comprehensive line of product accessories designed to simplify installation and maintenance, enable greater operator convenience and safety, and assure sensor accuracy and protection while operating in harsh environments.

Sensor Mounting, Protection and Operation:

Air Purges

(AA3, AA5, AP6, APA)



An air purge is designed to fit on the front of a sensor head and blow a constant stream of air past the lens. In dirty, dusty or steam-filled environments, it prevents material from collecting on the lens that may obstruct view of the target and interfere with sensor accuracy.

Air and Water Jackets

(WJ5, WA3, AWC, WJA)



Air and Water Jackets are rugged housings designed to fully or partially enclose and protect a sensor head from high ambient temperatures (up to 200°C / 400°F). By circulating air or water through an enclosed jacket lining, it helps maintain a constant and cool sensor operating temperature, assuring greater accuracy and long term reliability.

Mounting Bases, Flanges and Brackets

(MB5, MFS, RAM, BMA, TM6, SB1, SB4, SB5)



We offer a variety of accessories that make IRCON sensors and/or lenses easy to mount and aim. They facilitate setting the lens into a firmly fixed position, to ensure correct optical alignment to the target being measured.

Sight Tubes:

For furnace refractory applications, ceramic and metallic sight tubes are available to provide an unobstructed line of sight from sensor to target.



Power Supplies:

We offer power supplies suited to the particular requirements of IRCON sensors. Each are designed to simplify wiring, and assure correct power to IRCON instruments.

Thermal Imager Protection:

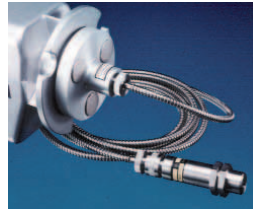
Maxline 2 X2EEAP Air Purge and Cooling Jacket

A combined Air Purge and Cooling Jacket accessory is available for protection of Maxline 2 thermal imaging cameras. With the Maxline 2 camera enclosed, the Air Purge blows constant air over the window to restrict collection of dust and debris, while the Cooling Jacket protects the camera electronics from high ambient temperatures (up to 356°F or 180°C) to assure accurate readings.



Sensor Fiber Optic Lens Assemblies:

(For Mirage, Modline 3, Infrarail, SA and SR Series Sensors)



For applications where a target is difficult to sight, the installation area is limited, or the environment contains high ambient temperatures, IRCON fiber optic lens accessories can provide an optical link between the target to be measured and the sensor.

IRCON fiber optic accessories enable temperature monitoring from restricted or awkwardly-positioned perspectives. The Reimaging Lens can be placed within a severe environment or small space, with the sensing components placed at a distance, with both ends linked by a stainless steel covered fiber optic cable (available in lengths up to 25 feet).



Reimaging lens with miniature quick-release air purge and cooling assembly

The Reimaging Lens component is NEMA-4 rated, housed in stainless steel, includes a protective window and is available with focal ranges including 6 to 10 inches (close focus) or 10 inches to infinity. For particularly hostile environments, small quick-release air purge and cooling accessories are available.

An Illuminator option, designed to temporarily connect at the sensor end of the fiber optic assembly, is available for transmitting bright light through the fiber optic cable and reimaging lens assembly. This is a handy tool when aligning and focusing the lens on a target object, to accurately define the spot size to be measured.

Sensor Displays:

Displays help you monitor temperature from a convenient and safe location.



Temp View: A panel mounted LED temperature display is available for Modline 4, Javelin, MinIRT and SR Series sensors. Temperature alarm relays are available as an option.

Modline 5 DPM (Digital Panel Meter): Similar to Temp View, a DPM provides temperature display with additional features allowing remote configuration of Modline 5 sensors. Temperature alarm relays are also available as an option.

Modline 5 MSI (Multi Sensor Interface): The MSI includes a 10", NEMA 4 rated touch-panel display, processing capabilities and multiple communication ports, enabling greater process monitoring and control flexibility. Centrally monitor multiple temperature points and alarms, and remotely adjust settings of up to twelve Modline 5 sensors on the production floor, over your company network or the Internet. The system can also capture trend data, and communicate with process control, PLC and SCADA systems.



Software Solutions

For Maxline 2 series thermal imaging systems:

Image Analysis Software - Our general purpose thermal imaging software for R&D, testing, and laboratory applications, it provides a flexible solution to serve a variety of thermal analysis and monitoring applications.

Thermal Seal Inspection Software - Instantly inspect the integrity of seals as each product leaves the thermal sealer, achieving 100% inspection. It is designed to serve food, pharmaceutical, or medical supply manufacturers and other industries where seal integrity is paramount.

Fiber Optic Preform Inspection Software - Designed exclusively to suit the needs of temperature and diameter measurement in fiber optics manufacturing.

Torpedo Car Inspection Software - Designed exclusively for steel mill applications, this system helps monitor torpedo rail cars as they transfer molten material from the blast furnace to the BOF (Basic Oxygen Furnace).

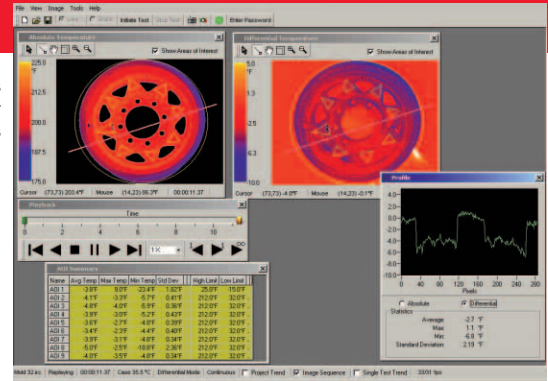


Image Analysis Software for Maxline 2 systems

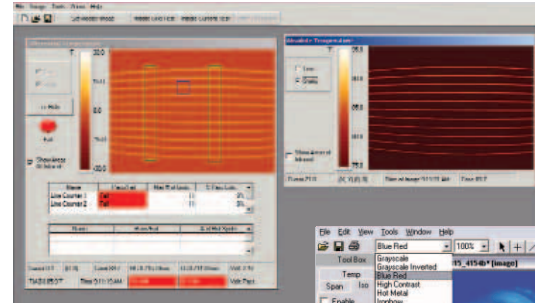
For Stinger series thermal imaging systems:

Backlite Thermal Grid Inspection Software - Designed specifically for thermal grid inspection in automotive glass production.

For digiCam/2-IR series portable thermal imagers:

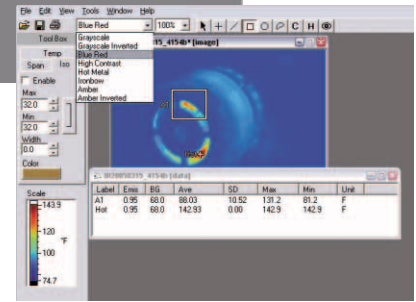
Image Report Software - Shipped with digiCam/2-IR "M" and "P" series cameras, this software enables detailed viewing and generating reports of thermal images.

Image Analysis Software - Bundled with digiCam/2-IR "A" series cameras, this software offers the same features as Image Report software, in addition to features for conducting detailed thermal analysis.



Backlite Grid Inspection Software for Stinger systems

Image Analysis Software for digiCam/2-IR "A" Series systems



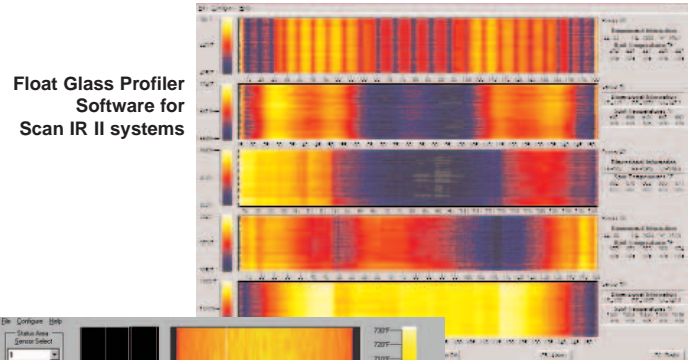
For ScanIR II series thermal scanning systems:

Configurator Software - Our standard operator interface software, designed for basic instrument setup.

ZoneMaster Software - For monitoring intermittent processes such as parts on an assembly line.

SpotMaster Software - For monitoring continuous processes such as films and sheets.

Float Glass Profiler Software - For glass annealing lehrs, capable of displaying profiles of up to five sensors simultaneously.

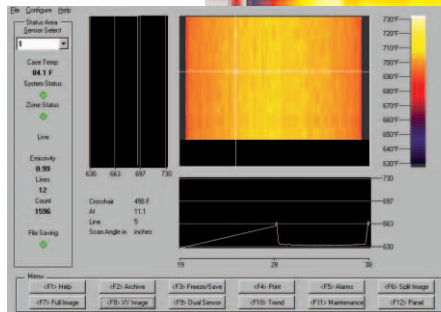


Float Glass Profiler Software for Scan IR II systems

For Modline 5 series Infrared thermometers:

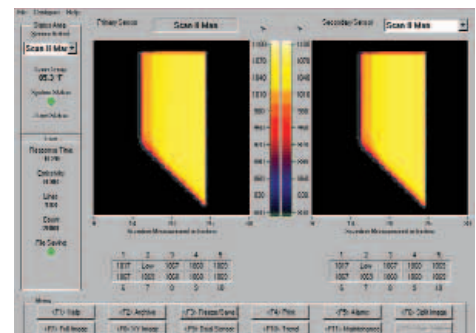
ModView Configuration Software - Shipped with every Modline 5 sensor, this software enables remote configuration and monitoring, and makes initial setup and ongoing setting adjustments easy.

ModView Calibration Software - Designed for Modline 5 users who require periodic verification of sensor calibration, this software, along with a blackbody source and Modline 5 Transfer Standard Unit, helps to assure that other Modline 5 devices are measuring accurately.



SpotMaster Software for Scan IR II systems

ZoneMaster Software for Scan IR II systems



Typical IRCON Product Applications

Following is a matrix of typical applications of IRCON products. For more comprehensive discussion about solutions for your situation, please contact an IRCON product specialist in your area or submit a request to http://www.ircon.com/tech_request

Spot Temperature Monitoring Systems:	Mirage	Modline 3	InfraRail	CHF	Modline 5	SA Series	SR Series	MiniIRT	Modline 4	Javelin	Ultimax Plus
Molten steel or glass production		X			X						X
Iron or steel forging or annealing	X	X	X		X						X
High temperature steel fabricating (forming, machining, welding, etc. requiring wide temp. ranges)	X	X	X		X	X	X				X
Kiln and Vacuum Furnace monitoring (difficult, high temp. applications with small targets, dust and/or smoke)	X	X			X		X				
Silicon crystal production		X			X	X					
Non-ferrous metals	X	X			X	X					
Low temp. metals and small targets	X	X			X				X	X	
Thin film plastics, paints, waxes, oils:		X							X	X	X
Furnace walls (for glass melters)			X			X	X		X		
Glass surface temperature (for sealing, bending, annealing, tempering and forming)		X						X	X	X	
Thin polyester (PET) films, glass or ceramics		X						X	X	X	
Paper, food, or textile production (lower temperature applications)								X	X	X	X
Wire, fiber optic or thin cable production				X							

Area Temperature Scanning / Thermal Imaging Systems:

	ScanIR II	Stinger	Maxline 2	digicam/2-IR
Monitoring of continuous web or flat surface processes such as paper, fabric, panels, sheet metal or glass from a fixed position.	X		X	
Monitoring of objects, molds or curved surfaces, including a wide array of materials (See software page of this brochure for additional information)		X	X	X
Process, object or equipment monitoring, or plant and facility maintenance activities requiring a portable thermal imager.				X

IRCON Application Experience

Following is a list of examples where IRCON products and expertise have been applied over the many years we have been in business. For more comprehensive discussion about your situation, please contact an IRCON product specialist in your area, or submit a request to http://www.ircon.com/tech_request

Automotive

- Diesel Glow Plug Production
- Glass, Including Tempered and Bulletproof Materials
- Backlite Thermal Grid Inspection

Construction

- Asphalt Loadout Temperature
- Asphalt Dryer Drum Measurement
- Lime & Cement Kilns
- Cement Kiln Clinker Temperature
- Roofing Shingle Production

Electronics

- Printed Circuit Board and Bare Board Production
- Silicon Wafer Polishing
- IC Wire Bonding

Environmental

- Trash Pile Monitoring
- Digester Efficiency

Fiber Optics

- Preform Temperature
- Controlling Preform Shape
- Coating / Curing the Filament

Food & Pharmaceutical

- Candy Molds
- Tobacco Drying

Glass

- Belt Temperature Measurement
- Bulletproof Glass Bending or Laminating
- Gob Temperature
- Laminated Glass Production
- Glass Mold Temperature
- Tempered Glass

Metals

- Aluminum Smelters
- Cast Iron and Stainless Steel Pipe
- Coating Rebar
- Foundry Molds
- Ion Nitriding
- Mold Release
- Motor Wire Production
- Railroad Wheel Manufacturing
- Wire Coating
- Coil Coating

Packaging

- Corrugated Cardboard Production
- Thermal Seal Packaging or Product Inspection
- Hot Melt Glue Packaging or Product Inspection

Plastics

- Blow Molded Bottles
- Mold Repairs
- PET Bottles
- Thermoforming

Power

- Coal Fires
- Fly Ash Control

Pulp & Paper

- Recovery Boiler Monitoring
- Paper Converting

About Us

If you are looking for solutions to difficult temperature measurement and monitoring challenges, IRCON is the company to call. IRCON offers a product range and experience that are unmatched in the industry.

In business since 1962, IRCON products perform with accuracy and repeatability in the harshest and most volatile conditions requiring precise temperature measurement and control.

Our solutions are designed to suit a wide variety of applications, with a product line capable of measuring temperatures from -50° to 6500°F (-50° to 3500°C).

Whether you are in the business of manufacturing or processing metals, glass, plastics, ceramics, paper, textiles, chemicals, packaging, food or pharmaceutical, chances are IRCON has a solution to address your situation.

Global Service and Support Solutions

Beyond leading-edge products and expertise, you can count on IRCON for a variety of valuable services and support options, including:

- Product warranty programs
- Fixed repair cost programs
- On-site repair and preventative maintenance
- On-site technical consulting and troubleshooting
- Operator training
- Sensor re-calibration and certification service

Through our network of nearly 150 distributors around the globe, and service centers in North America, Europe, and Asia – no matter where you are, IRCON specialists are near you to assist.

Count on IRCON to Help You Find Solutions

Feel free to contact us for help in addressing your temperature monitoring challenges.

For additional information, please visit our web site, contact an IRCON specialist in your area, or submit a request at http://www.ircon.com/tech_request

IRCON Inc is a Spectris company – a leading global supplier of precision instrumentation and controls. For additional information, please visit <http://www.spectris.com>

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NIST Calibration Provider

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Note: All product specifications and contents of this brochure are subject to change without notice.



