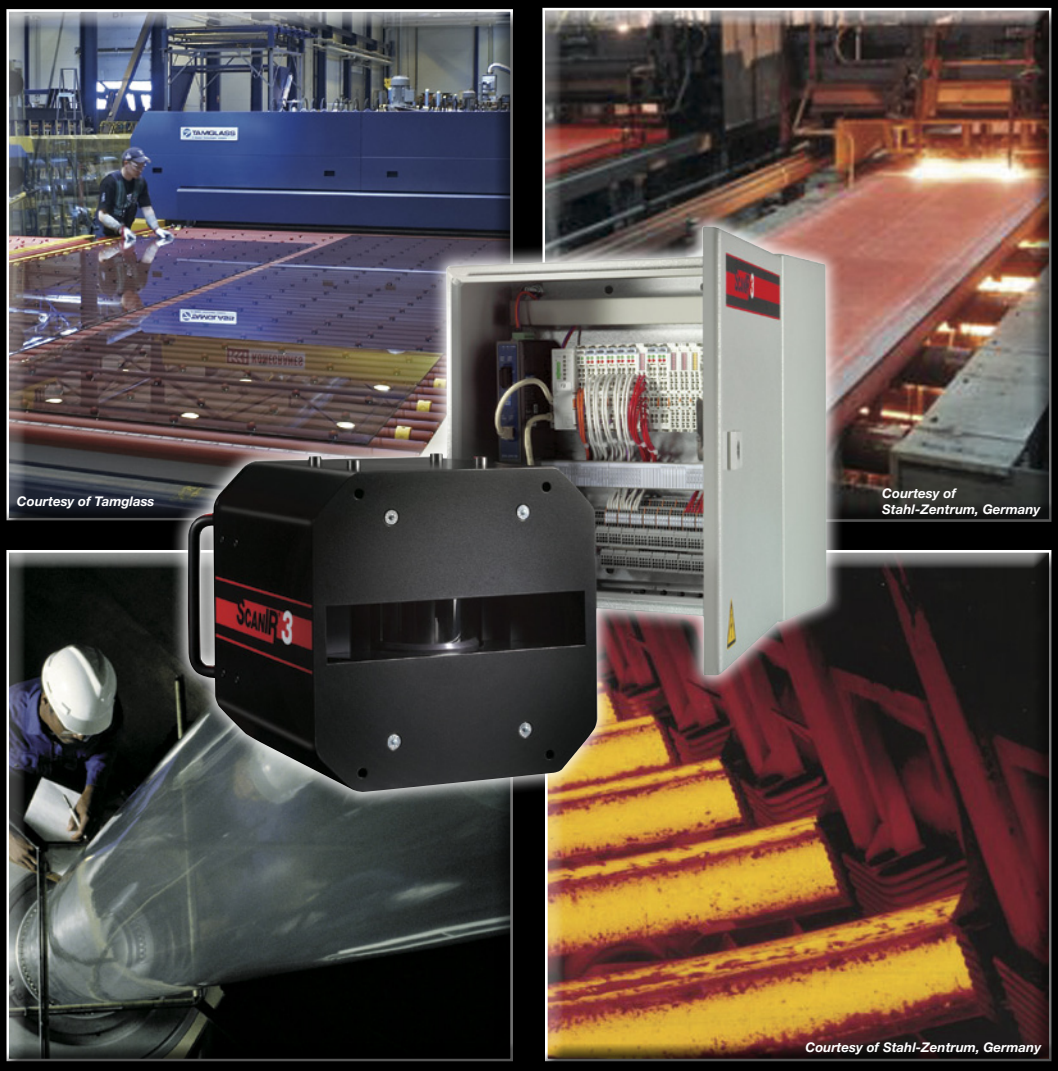
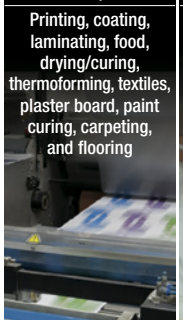
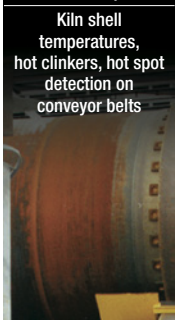
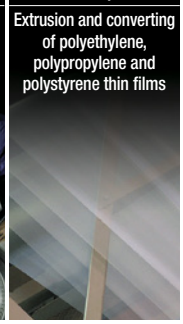
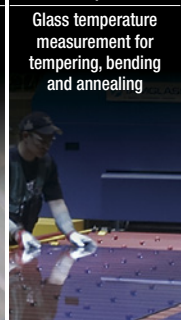
ScanIR®3

Linescanning Infrared Thermometer and Thermal Imaging System



IRCON®

Fluke Process Instruments

S310	S320	S330	S335	S339	S343	S344	S350
600 to 1200ºC (1112 to 2192ºF) 1.0µ	400 to 950ºC (752 to 1742ºF) 1.6µ	20 to 350ºC (68 to 662ºF) 3-5µ	100 to 650ºC (212 to 1202ºF) 3.5-4.0µ	100 to 800ºC (212 to 1472ºF) 3.9µ	30 to 250ºC (86 to 482ºF) 3.43µ	100 to 350ºC (212 to 662ºF) 3.43µ	100 to 950ºC (212 to 1742ºF) 5µ
Hot strip mills, plate mills and continuous casting	Galvanizing lines, Non ferrous metal hot strips, continuous casting	Printing, coating, laminating, food, drying/curing, thermoforming, textiles, plaster board, paint curing, carpeting, and flooring	Kiln shell temperatures, hot clinkers, hot spot detection on conveyor belts	Heat treating, ore processing	Extrusion and converting of polyethylene, polypropylene and polystyrene thin films	Extrusion and converting of polyethylene, polypropylene and polystyrene thin films	Glass temperature measurement for tempering, bending and annealing
							

ScanIR®3 Linescanner with ScanView™ Pro Software

The ScanIR3 Linescanner Series is a family of advanced infrared linescanners that provides accurate, real-time, thermal imaging for a wide variety of industrial applications, including continuous sheet and web-based processes, as well as discrete manufacturing processes. The ScanIR3 series is designed for reliability and continuous operation in harsh industrial environments.

The ScanIR3 robust housing includes built-in provisions for water-cooling and air-purge, and features built-in laser sighting. A rugged processor box provides universal input and output capabilities in the field without the need for an external computer.

The ScanIR3 linescanner is surprisingly easy-to-install and manage. One bundled sensing head cable allows for fast and easy installation.

Versatile ScanView Pro software allows custom configuration of ScanIR3 operating parameters, and display of thermal images and temperature profiles on a standard PC.

Features

- Fast scan speed up to 150 lines per second
- Up to 1024 measurement points per line
- High optical resolution up to 200:1
- PC independent input/output capabilities
- Reliable Ethernet Communication (*optional fiber optics*)
- Rugged, waterproof housing with built-in laser
- Reliable brushless scanning motor
- Field-replaceable window
- Built-in air purge and water cooling as standard
- One bundled sensing head cable with one-click connector to the scanner

General Specifications

Environmental Rating	IP65 (IEC 60529)
Ambient Operation Temperature	
without water-cooling	0 to 50ºC (32 to 122ºF)
with water-cooling (integrated)	180ºC (356ºF) maximum
with internal heater (optional)	-40ºC (-40ºF) minimum
Internal Operating Temperature Laser	0 to 60ºC (32 to 140ºF) automatic switch OFF at < 5ºC (41ºF) or > 50ºC (122ºF)
Storage Temperature	-25 to 65ºC (-13 to 149ºF)
Relative Humidity	10 to 90%, non-condensing
Shock	IEC 60068-2-27, 3 axes, operating 5g @11ms, 15g at 6ms
Vibration	IEC 60068-2-6, 3 axes, 10 to 150 Hz, operating 2g above 20Hz
Scan Motor	MTBF: 40.000 hours
Water Cooling/Air Purge	standard feature
maximum water pressure	15 bar
maximum air pressure	3 bar
CE Conformance	EN61010-1: 1993/A2: 1995 EN61326-1, EN60825-1

Measurement Specifications

Optical Scan Rate	20 to 150Hz
Response Time	20ms
Field of View	90º
Focus	1.52m standard, custom focuses available
Emissivity	0.1 to 1.0 digitally adjustable
Samples	256 per scan line up to 150Hz 512 per scan line up to 80Hz 1024 per scan line up to 40Hz
Signal Processing	Max, Min, AVG, Peak/Valley Hold, Alarm set points

Electrical Specifications

Processor Box Outputs *(11 module max. per box)*	
Analog	0-20mA, 4-20mA or 0-10V 16 bit resolution, 2 channels per module
Digital	24 VDC switching 16 channels per module
Relay	Potential free, closing contacts 2 channels per module
Inputs	Trigger, laser switching, system functions
Ethernet Communication	TCP/IP protocol 10/100 Mbit/s
Power	100-240VAC, 44/66Hz
Warm-up Time	30 minutes
Environmental rating	IP65 (IEC 60529)
Ambient Operation Temperature	0 - 50ºC (32 - 122ºF)

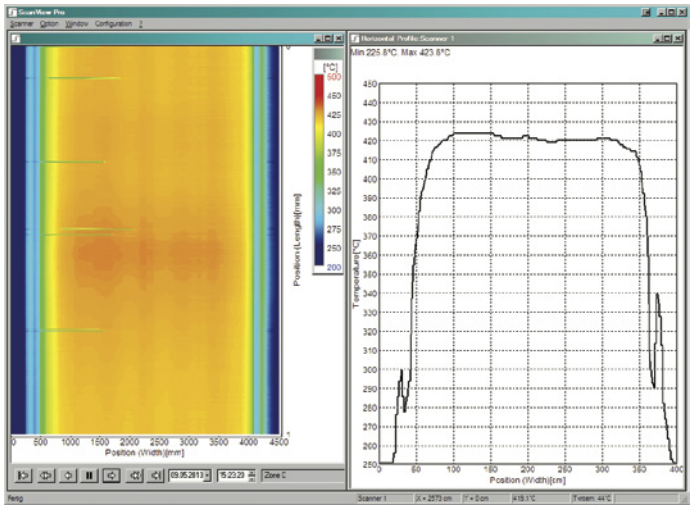
Imaging

Real-time thermal imaging is provided by ScanView™ Pro software for temperature monitoring, display and analysis. With ScanView Pro software, you can quickly detect a hot spot or non-uniformity before it becomes a problem.

The ScanView Pro software provides features to subdivide thermal images from the ScanIR3 linescanner into portions of specific interest. Temperatures in each portion can be processed for certain math functions, like average, maximum or minimum temperatures. In case of a thermal defect, the software triggers an alarm.

For interfacing with other control systems, temperatures are available as current or voltage analog outputs by virtue of the analog output modules provided as an option with the processor box. No PC is necessary to provide these outputs.

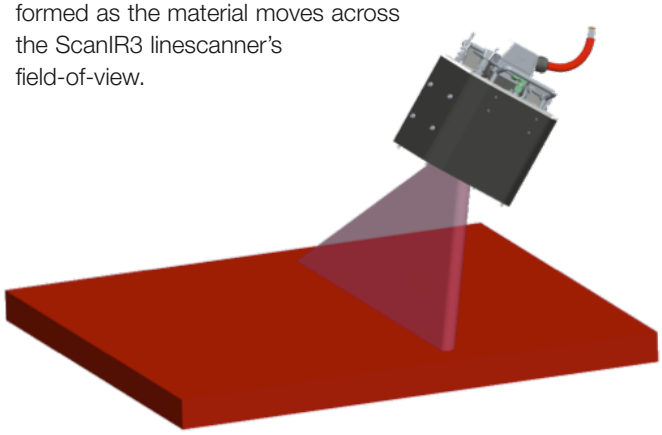
ScanView Pro Features



- View two-dimensional thermal images, temperature profiles and differential images
- Define product-specific configurations
- Analyze temperatures automatically (Minimum, Maximum and Average)
- Fail-safe alarm logging
- Define a reference image display
- Playback stored thermal images as a movie
- System interfaces include analog/digital output modules, OPC or DDE server, or a serial COM port
- Supports multiple ScanIR3 linescanners
- Specify security passwords and access levels
- Multiple language support

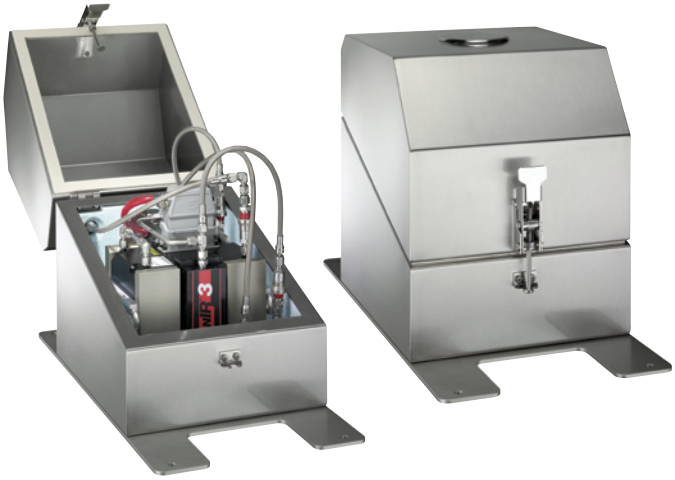
Edge-to-edge Temperature Measurement

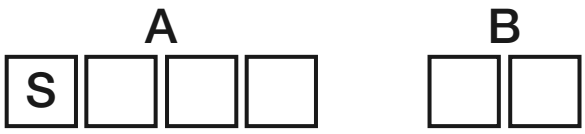
Unlike point sensors that measure a single point, the ScanIR3 scanner measures multiple temperature points across a scan line. The ScanIR3 motorized mirror scans at rates up to 150 lines per second. The faster scan rate allows rapid detection of temperature non-uniformities and hot spots. Rotating optics collect infrared radiation at 1024 points within a 90° field of view. A two-dimensional image is formed as the material moves across the ScanIR3 linescanner's field-of-view.



ScanIR3 High Temperature Enclosure

- High temperature enclosure for the ScanIR3 linescanner withstands process temperatures up to 1090ºC (1994ºF)
- Modular system with choice of cooling options allows users to configure to suit their application
- Rugged stainless steel construction
- Integrated shutter for fail-safe operation





Block A	Temperature Range	Spectral Range	Optical Resolution (measured at focal point)	Primary Applications
S310	600-1200ºC (1112-2192ºF)	1.0µm	D/200	**Hot strip mills, plate mills and continuous casting**
S320	400-950ºC (752-1742ºF)	1.6µm	D/200	**Galvanizing lines, non ferrous metal hot strips, continuous casting**
S330	20-350ºC (68-662ºF)	3-5µm	D/170	**Printing, coating, laminating, food, drying/curing, thermoforming textiles, plaster board, paint curing, carpeting and flooring**
S335	100-650ºC (212-1202ºF)	3.5-4.0µm	D/170	**Kiln shell temperatures, hot clinkers, hot spot detection on conveyor belts**
S339	100-800ºC (212-1472ºF)	3.9µm	D/170	**Heat treating, ore processing**
S343	30-250ºC (86-482ºF)	3.43µm	D/33	**Extrusion and converting of polyethylene, polypropylene and polystyrene thin films**
S344	100-350ºC (212-662ºF)	3.43µm	D/75	**Extrusion and converting of polyethylene, polypropylene and polystyrene thin films**
S350	100-950ºC (212-1742ºF)	5µm	D/170	**Glass temperature measurement for tempering, bending and annealing**

Block B	Cable Length
10	10m (32ft)
15	15m (49ft)
20	20m (65ft)
25	25m (82ft)
30	30m (98ft)

Accessories

S3X-Basic Kit Basic Kit to mount one or more selected outputs to the Processor Box
Please Note: The Basic Kit accessory must be ordered with the ScanIR3 linescanner.

S3X-16DI-I Digital In (16 each)
S3X-16DO-I Digital Out (16 each)
S3X-2AOC0-I Analog Out Current (2 each), 0–20mA
S3X-2AOC4-I Analog Out Current (2 each), 4–20mA
S3X-2AOV-I Analog Out Voltage 0-10V (2 each)
S3X-2R-I Relay (2 each)
S3X-2A-ISO-I Passive current isolation
S3X-LWL-I Fiber Optic/RJ45 Converter
S3X-FSISO Fitting Set Cooling (ISO)
S3X-FSNPT Fitting Set Cooling (NPT)

S3X-RMB Adjustable Rugged Mounting Base scanner mounting plate included

S3X-ENC Enclosure and Base
Stainless steel enclosure with mounting base and integrated fail safe shutter (Includes internal cold plates, grommet plates for cooling water.)

S3X-ENCIS Insulating Shield
Stainless steel envelope with a high performance refractory core.

S3X-ENCWCS Water-Cooled Shield
Stainless steel high performance water shield. A 25mm (1") water inlet and outlet permit high flow rates and extremely high heat removal capability.

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