E instruments

*IR*tech Radiamatic TImage IR640

Industrial Auto-centering Infrared Thermometer with Thermal Image Camera

*IR*tech
Infrared Technology

- Temperature range -20 to +900°C
  Thermal Sensitivity NETD 0,10°C
- Resolution 80x80 / 6400
  Software interpolation
- Auto-centering Infrared Thermometer
- Standalone operation
  4-20mA output
  RS485 network
  or
  High Speed USB
  Fast Ethernet POE
- Motorized focus with remote control
- 50 Hz with Real Time Recording
  Hot spot automatic detection
- Waterproof Ip67 Rugged case
- Optics available (close to 200:1) :
  Standard, Wide and Tele
- Compact 36 x 90mm M30 (185gr)
- Windows SDK royalty free included
  Standard package library
  to use camera with PLC,
  Labview, DDL C/Basic and Linux
- I/O pins for process interface / Alarms

CE

Next to time, temperature is the most frequently measured physical property. The temperature behavior is therefore a very good indicator for the status of physical systems. Too much friction generates heat, too high resistance of electrical contacts creates higher temperatures; energy losses are mostly shown by changes in temperature. Therefore one can find thermal processes in almost all industry branches. With the**TImage** you can not only see where it is hot, you can also measure exactly the temperatures, all within a 8 millisecond interval! It provides excellent infrared images in a wide temperature range of -20 up to 1800°C and an extensive range of software features to capture and edit infrared snapshots and videos, for thermal analysis with hot and cold spot detection display of isotherms and much more.
The **TImage** is the thermographic solution for:
• Research and Development (R&D)
• Test stations (T&M) and Process automation
• Portable measurement tasks for maintenance

eigroup
e instruments

www.eigroup.biz

Features are related to all models equipped with full configuration. On next pages you can find specific details.

Bulletin TImage IR640 - ed. 03-2018

IRtech Radiamatic TImage IR640

Industrial Auto-centering Infrared Thermometer with Thermal Image Camera

Technical Specifications

Radiamatic Timage IR640

Measurement specifications

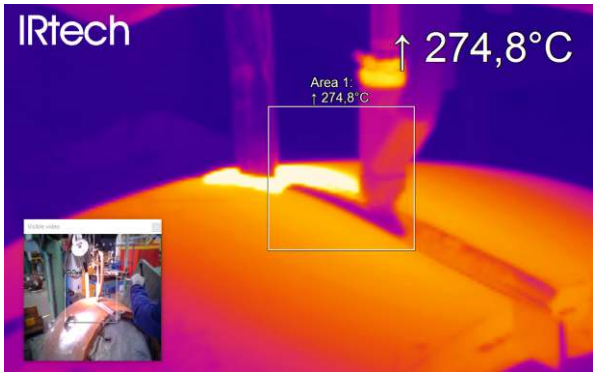
Temperature ranges	-20°C to 100°C 0°C to 250°C (20) 150°C to 900°C
Frame rate	50 Hz
Lenses (exchangeable)	
	12° x 12° FOV f=12,7mm 30° x 30° FOV f=5,1mm 55° x 55° FOV f=3,1mm 80° x 80° FOV f=2,3mm
Thermal Sensitivity (NETD)	0,10 K
Detector	Focal Plane Array (FPA) uncooled micro bolometer
Spectral range	7,5 - 13 µm
Optical resolution	80 x 80 pixel
System accuracy	±2% or ±2°C

General specifications

Environmental rating	IP 67
Ambient temperature	0 - 50°C
Storage temperature	-40 - 70°C
Relative humidity	10 - 95 %, non condensing
Shock	25/50G, IEC 68-2-27
Vibration	2G, IEC 68-2-6/64
Weight	185 g
Size	36 mm x 90 mm M30x1
Output	4-20mA / RS485 USB / Fast Ethernet POE
Power supply	5-30V, USB or POE
Process Interface (electrically isolated)	0-10V input, Digital input, 0-10V 4-20mA Output
Process Interface features	External control of emissivity, background radiation compensation or reference temperature/ Triggered video or snapshot recording analog output of temperatures of main measuring area or alarm output
Motorized Focus	
Warranty	2 years

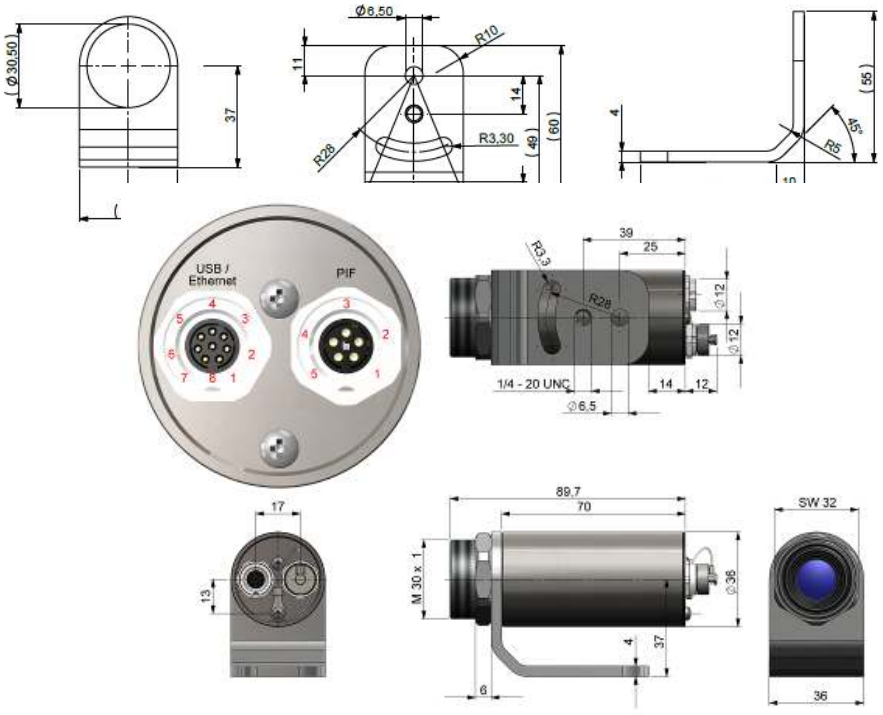
Software features

Configuration Automatic or manual scaling of the measuring range
Selectable and definable software layouts
Language-translation-tool
Adjustable measuring parameters :
Emissivity 0.10 - 1.00
Background radiation compensation
Reference temperature
Measurement Modes
Flexible spots and measurement fields with automatic calculation of MAX, MIN or AVG values
Automatic HOT-spot- and COLD-spotfinder
Temperature profiles
Isotherm exposition Reference function (with external sensor)
Linescanning modes
Image presentation
11 color palettes
Color reference bar
Histogram
Digital display of measuring field temperatures (with alarm signal)
Video control (play, pause, stop, detail screen forward & backward)
Full screen mode
Video recording Realtime video recording (radiometric) with 50 Hz (adjustable) Video editing tools
Snapshot saving (radiometric JPG)



Radiamatic Timage standard package

- Timage IR640
- USB cable (1 m)
- Mounting bracket with Nut
- I/O cable with terminal block
- Software TImage connect
- Operators manual

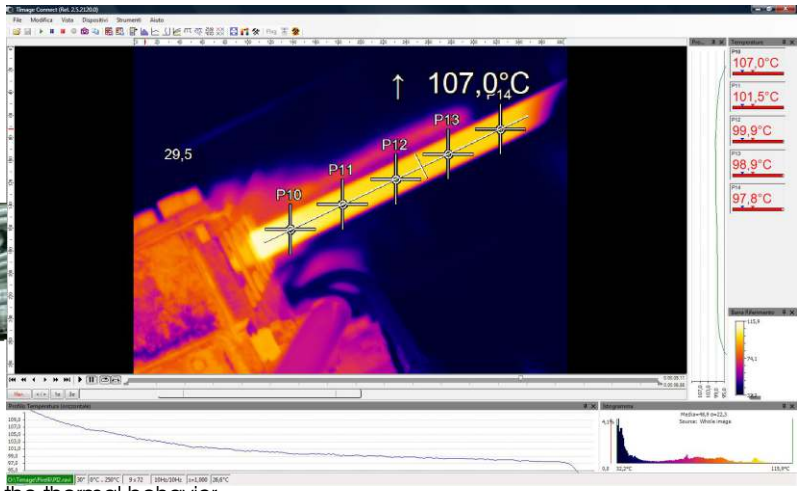


Specifications may change without notice

IRtech Radiamatic TImage IR640

Industrial Auto-centering Infrared Thermometer with Thermal Image Camera

Applications



Thermal processes in the industry

Next to time, temperature is the most frequently measured physical property. The temperature behavior is therefore a very good indicator for the status of physical systems. Too much friction generates heat, too high resistance of electrical contacts creates higher temperatures; energy losses are mostly shown by changes in temperature. Therefore one can find thermal processes in almost all industry branches.

Applications

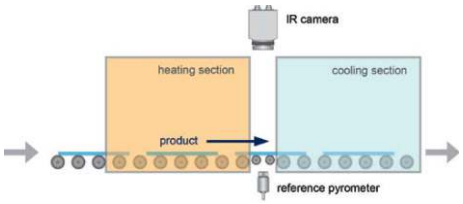
With the TImage you can not only see where it is hot, you can also measure exactly the temperatures, all within a 8 millisecond interval!
It provides excellent infrared images in a wide temperature range of -20 up to 900°C and an extensive range of software features to capture and edit infrared snapshots and videos, for thermal analysis with hot and cold spot detection display of isotherms and much more.
The TImage is the thermographic solution for:

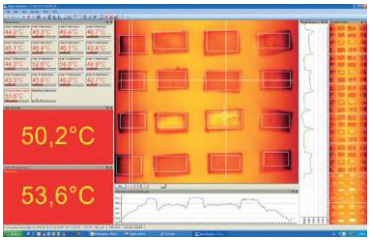
- Research and Development (R&D)
- Test stations (T&M)
- Process automation
- Portable measurement tasks

Similar to an oscilloscope the infrared camera became an essential tool for engineers. The TImage can, for example, be used in the field of research and development for the observation of the thermal behavior of working PCBs during test runs. The camera offers a versatile use in test booths or at test stations due to its compactness. Inside test stations for breaks and clutches engineers will see thermal effects on the mechanical parts completely. In branches like the solar panel industry, in the development of LCD flat screens or in semiconductor process applications, the TImage is qualified for material homogeneity identification. In the representation of finest temperature details at different targets, the camera distinguishes itself in priority through its very good thermal sensitivity (NETD 0.08 K with 31° FOV). In the application field of medical investigations the TImage allows accurate and reliable medical screenings in combination with an electronically controlled reference temperature device.
Within the range of process automation, the TImage is a reliable monitoring system for the observation of continuous processes within the plastic industry, flat glass production, metal treatment and surface technology. Hotspots within bulky materials on conveyor belts can be detected quickly to avoid the development of fire. Network integration tools help to implement the TImage into factory automation systems. The optional cooling jacket and other accessories allow the installation under harsh environments. The TImage can be combined with pyrometers and blackbody reference sources for smart and reliable temperature observations under difficult ambient conditions. A process interface output with an analog 0-10V or an alarm signal is the direct communication interface to the process. With this interface, temperatures of the main measuring area can be issued analogue or with an alarm. A process interface input allows beside the synchronization of the camera an external control of emissivity values, background radiation compensation or the triggering of video or snapshot recordings. In combination with tablet PCs the TImage infrared camera can beused for preventive, electrical maintenance purposes as well as within the building thermography. Herewith the camera is closing the gap between handheld infrared snapshot cameras and pure online installations.

Line Scanner

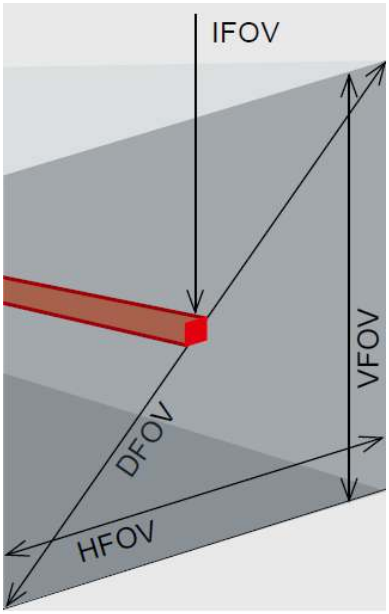
Scanning a moving process as Glass windows, Plastic Film, Cement Kiln. Diagonal mode for 200 points at 120Hz.





Specifications may change without notice

Optics



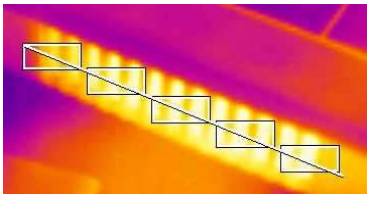
HFOV: Horizontal enlargement of the total measuring field at object level

VFOV: Vertical enlargement of the total measuring field at object level

IFOV: Size of the single pixel at object level

DFOV: Diagonal dimension of the total measuring field at the object level

MFOV: Recommended, smallest measured object size of 3 x 3 pixel



OPTICS

80 x 80 px	Focal length [mm]	Minimum measurement distance*	Angel	Distance to measurement object [m]												
					0.05	0.1	0.2	0.3	0.5	1	2	4	6	10	30	100
F05 Standard lens	5	0,2 m	30°	HFOV [m]	0.028	0.056	0.111	0.167	0.279	0.557	1.115	2.230	3.346	5.6	16.7	55.8
			30°	VFOV [m]	0.028	0.056	0.111	0.167	0.279	0.557	1.115	2.230	3.346	5.6	16.7	55.8
			43°	DFOV [m]	0.039	0.079	0.158	0.24	0.39	0.79	1.58	3.15	4.7	7.9	23.7	78.9
			6,67 mrad	IFOV [mm]	0.33	0.67	1.33	2.0	3.33	6.67	13.33	26.67	40.00	66.67	200.00	666.67
F13 Telephoto lens	13	0,3 m	12°	HFOV [m]		0.022	0.043	0.065	0.11	0.21	0.43	0.85	1.28	2.1	6.4	21.3
			12°	VFOV [m]		0.022	0.043	0.065	0.11	0.21	0.43	0.85	1.28	2.1	6.4	21.3
			17°	DFOV [m]		0.031	0.061	0.092	0.15	0.30	0.60	1.20	1.81	3.0	9.0	30.1
			2,66 mrad	IFOV [mm]		0.3	0.5	0.8	1.3	2.7	5.3	10.6	15.9	26.6	79.7	265.6
F03 Wide angle lens	3	0,2 m	55°	HFOV [m]	0.057	0.110	0.218	0.325	0.539	1.07	2.14	4.27	6.41	10.7	32.0	106.7
			55°	VFOV [m]	0.057	0.110	0.218	0.325	0.539	1.07	2.14	4.27	6.41	10.7	32.0	106.7
			79°	DFOV [m]	0.080	0.156	0.308	0.459	0.762	1.52	3.02	6.04	9.06	15.1	45.3	150.9
			11,15 mrad	IFOV [mm]	0.6	1.2	2.3	3.4	5.6	11.2	22.4	44.6	66.9	111.5	334.5	1114.8
F02 Super wide angle lens	2	0,2 m	80°	HFOV [m]	0.090	0.174	0.343	0.509	0.884	1.682	3.357	6.708	10.058	16.8	50.3	167.5
			80°	VFOV [m]	0.090	0.174	0.343	0.509	0.88	1.682	3.357	6.708	10.058	16.8	50.3	167.5
			113°	DFOV [m]	0.127	0.246	0.483	0.72	1.19	2.38	4.75	9.49	14.2	23.7	71.1	236.9
			15,45 mrad	IFOV [mm]	0.08	1.6	3.2	4.7	7.8	15.5	31.0	61.9	92.8	154.6	463.7	1545.5

Specifications may change without notice