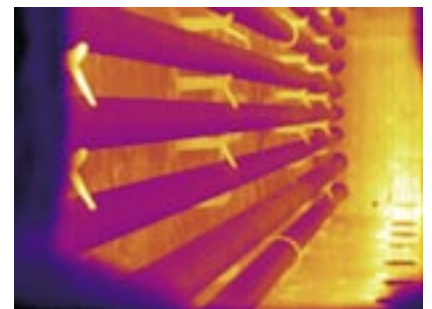


ThermaCAM™ P50F

For high temperature industrial furnace applications



See through flames



- SEE THROUGH FLAMES
- INSPECT GAS-FIRED FURNACES
- VERIFY CHEMICAL HEATERS
- MONITOR COAL-FIRED BOILERS
- SCAN, DETECT, REPAIR





Uncooled Infrared Camera for Industrial Furnace Applications

Designed exclusively to “see through flames” in all types of gas-fired furnaces, chemical heaters, coal-fired boilers

Introducing the new **P50F** infrared (IR) cameras, designed exclusively for high temperature industrial furnace applications. These cameras are ideal for monitoring all types of furnaces, heaters and boilers, particularly in the chemical, petrochemical and utility industries.

See through flames.

They feature the latest in uncooled microbolometer sensor technology, meaning the camera is ready to use in less than 1 minute. With virtually no “cool down time required,” this means you can get to work faster and have less wait time standing next to extremely hot heaters. Custom-built to see through flames, they also feature a detachable heat-shield designed to reflect heat away from the camera and camera operator, providing increased protection. It's Ready to Use.

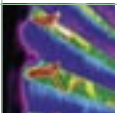
Measure temperature on more than one single spot

Thermocouples can only provide a temperature reading on one spot, whereas the P25F and P50F infrared cameras provide temperature readings across the entire surface of your heater/boiler/furnace - a massive new benefit for you. Plus, they help you inspect faster, work safer and avert unscheduled shutdowns and, worse, catastrophic failures. It's Innovative.

You can even use the “burst recording” feature to record and save a series of images of the inner workings of your heater/boiler/furnace while it's running. It's Powerful.

See potential coking, scaling and slag build up on a thermal image

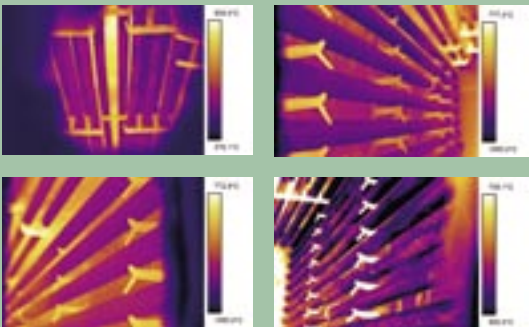
Coking, scaling and slag build-up are well-known problems and the P25F and P50F display clear and precise thermal images and temperature measurements - providing you with tools, readings and trend data to help you spot potential problems faster and easier than ever before. It's smart.





ThermaCAM P50F

- Excellent infrared image quality (320 x 240 pixels)
- Narrow band: 3.9 μm
- Removable heat shield
- Measures temperatures up to +1,500°C
- IP 54 rated
- Compatible with ThermaCAM Reporter software for professional inspection reports

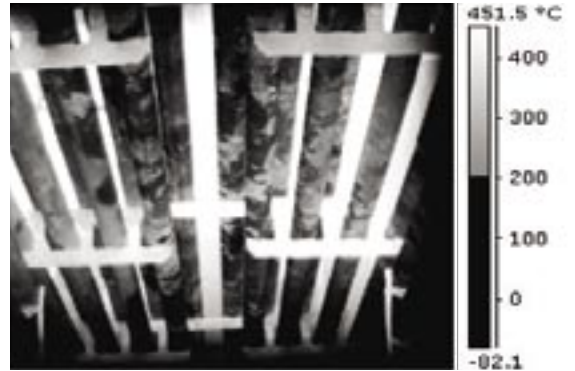


Available in 2 versions

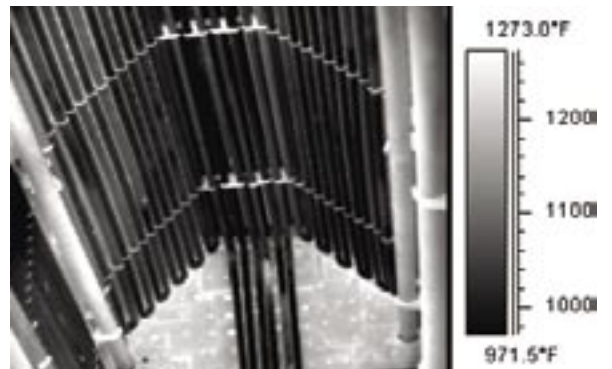
Apart from the ThermaCAM P50F, you can also choose for the ThermaCAM P25F. The P25F can also see through flames but has less analysis capabilities and no external display with remote control buttons.

For a detailed comparison, please see the technical specifications on the back of this brochure.

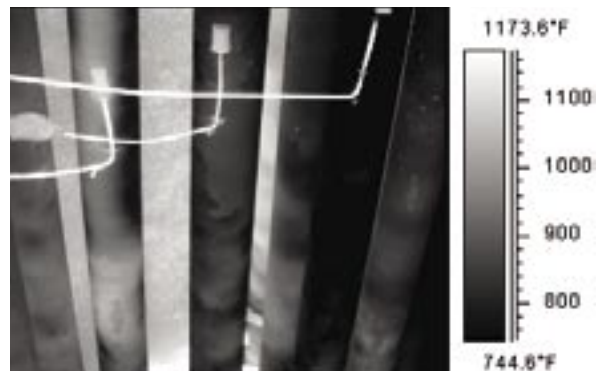
This infrared image clearly shows several areas of coking and overheating that are adjacent to, but not indicated by the tube skin thermocouples. Coking is seen on full tubes 2, 4, and 6 from the left.



This thermal image shows an overview of the roof tubes in a typical refinery heater. A small area of coking/overheating can be seen on one of the vertical, back-wall tubes (4th vertical tube from the left, near the top).



This infrared image identifies patchy external tube scaling that is often incorrectly identified as internal coking.



P25F with Heatshield



Technical specifications

	P25F	P50F
Imaging Performance		
Field of view/min focus distance	24° x 18° / 0.3 m	24° x 18° / 0.3 m
Spatial resolution (IFOV)	1.3 mrad	1.3 mrad
Thermal sensitivity @ 50/60Hz	0.6° C at 400° C	0.6° C at 400° C
Electronic zoom function	2, 4, interpolating	2, 4, 8, interpolating
Focus	Automatic or manual	Automatic or manual
Digital image enhancement	Normal and enhanced	Normal and enhanced
Detector type	Focal plane array (FPA) uncooled microbolometer; 320 x 240 pixels	Focal plane array (FPA) uncooled microbolometer; 320 x 240 pixels
Spectral range	Narrow band at 3.9µm	Narrow band at 3.9µm
Image Presentation		
Viewfinder	Built-in high-resolution color LCD (TFT)	Built-in high-resolution color LCD (TFT)
External display	Built-in high-resolution 4" color LCD (TFT) with integrated remote (optional)	Built-in high-resolution 4" color LCD (TFT) with integrated remote
Video output	RS 170 EIA/NTSC or CCIR/PAL	RS 170 EIA/NTSC or CCIR/PAL
Measurement		
Temperature ranges	+300° C to +500° C (+572° F to +932° F) +350° C to +700° C (+662° F to +1292° F) +500° C to +1000° C (+932° F to +1832° F) +700° C to +1500° C (+1292° F to +2732° F)	+300° C to +500° C (+572° F to +932° F) +350° C to +700° C (+662° F to +1292° F) +500° C to +1000° C (+932° F to +1832° F) +700° C to +1500° C (+1292° F to +2732° F)
Accuracy (% of reading)	± 2° C or ± 2%	± 2° C or ± 2%
Measurement modes	Fixed spot in center of image	Up to 10 movable spots. Automatic temperature difference (Δ) and placement and reading of maximum and minimum temperatures. Up to 5 movable circle areas or boxes. Up to 2 isotherms. Line profile.
Emissivity correction	Variable from 0.1 to 1.0	Variable from 0.1 to 1.0 or select from listings in pre-defined material list
Measurement features	Automatic corrections based on user input for reflected ambient temperature, distance, relative humidity, atmospheric transmission, and external optics	Automatic corrections based on user input for reflected ambient temperature, distance, relative humidity, atmospheric transmission, and external optics
Optics transmission correction	Automatic, based on signals from internal sensors	Automatic, based on signals from internal sensors
Image Storage		
Type	Removable CompactFlash® (128 MB) memory card	Removable CompactFlash (256 MB) memory card; built-in Flash memory (50 images); built-in (128 MB) RAM memory for burst and AVI recording
File format	Standard JPEG; 14 bit thermal measurement data included	Standard JPEG; 14 bit thermal measurement data included
Voice annotation of images	NA	Input via supplied Bluetooth® wireless headset up to 30 seconds of digital voice clip per image stored with image
Text annotation of images	NA	Predefined by user and stored with image
System Status Indicator		
LCD display	Shows status of battery and storage media. Indication of power, communication and storage modes.	Shows status of battery and storage media. Indication of power, communication and storage modes.
Power Source		
Battery type	Li-Ion, rechargeable, field-replaceable	Li-Ion, rechargeable, field-replaceable
Battery operating time	2 hours continuous operation	2 hours continuous operation
Charging system	In camera (AC adapter or 12V from car) or 2 bay intelligent charger	In camera (AC adapter or 12V from car) or 2 bay intelligent charger
External power operation	AC adapter 110/220 VAC, 50/60Hz or 12V from car (cable with standard plug optional)	AC adapter 110/220 VAC, 50/60Hz or 12V from car (cable with standard plug optional)
Power saving	Automatic shutdown and sleep mode (user-selectable)	Automatic shutdown and sleep mode (user-selectable)
Environmental		
Operating temperature range	-15°C to +50°C (5°F to 122°F)	-15°C to +50°C (5°F to 122°F)
Storage temperature range	-40°C to +70°C (-40°F to 158°F)	-40°C to +70°C (-40°F to 158°F)
Humidity	Operating and storage 10% to 95%, non-condensing, IEC359	Operating and storage 10% to 95%, non-condensing, IEC359
Encapsulation	IP 54, IEC 529	IP 54, IEC 529
Shock	Operational: 25G, IEC 68-2-29	Operational: 25G, IEC 68-2-29
Vibration	Operational: 2G, IEC 68-2-6	Operational: 2G, IEC 68-2-6
Physical Characteristics		
Weight	1.4 kg (3 lbs) w/battery, 2.2kg (4.8 lbs.) with heat shield	1.4 kg (3 lbs) w/battery, 2.2kg (4.8 lbs.) with heat shield
Size	100mm x 120mm x 220 mm (3.9" x 4.7" x 8.7")	100mm x 120mm x 220 mm (3.9" x 4.7" x 8.7")
Tripod mounting	1/4" - 20	1/4" - 20
Interfaces		
USB / RS232	Image, measurement data, voice and text transfer to PC (RS232 cable — optional)	Image, measurement data, voice and text transfer to PC (RS232 cable — optional)

System Includes

IR camera, Carrying case, lens cap, shoulder strap, hand strap, manual, batteries (2), power supply, battery charger, video cable, USB cable, CompactFlash memory card, ThermaCAM QuickView™ software, heat shield, Bluetooth® wireless headset (For P50F only)



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