

OptoTherm R&D

Thermal Imaging System for Research and Development

Infrared Temperature Measurement

Applications

- Product Development
- Material analysis and testing (NDT)
- Medical research

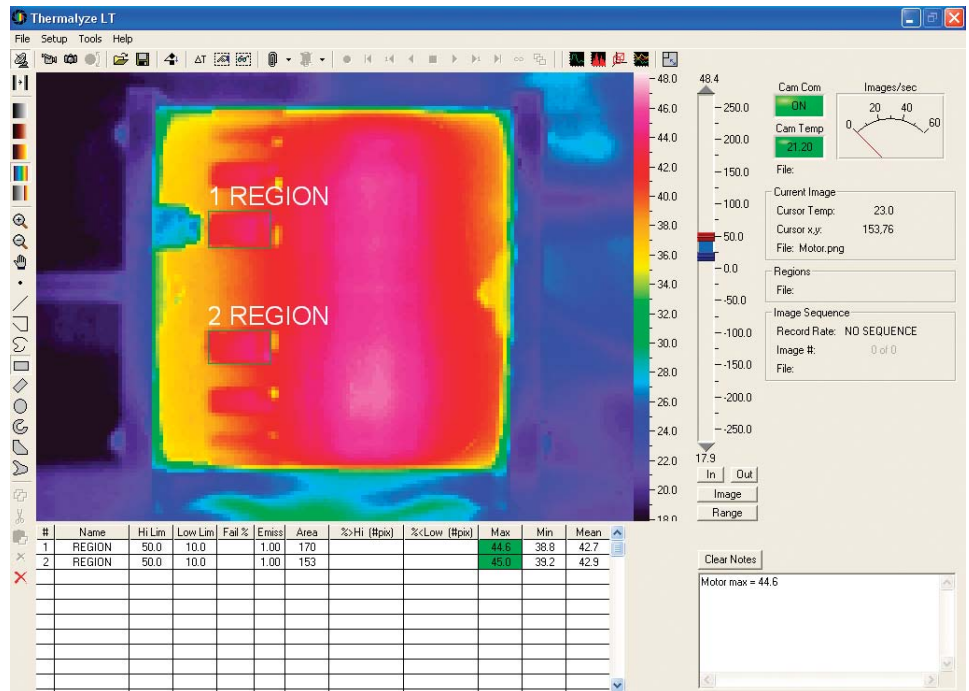
Features

- $<0.05^{\circ}\text{C}$ temperature sensitivity
- 320 x 240 uncooled detector
- 70 μm pixel resolution
- Real-time image analysis software
- 30 frames per second image capture
- 0 to 300 $^{\circ}\text{C}$ measurement range



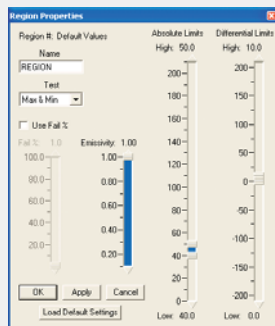
Thermalyze LT

Thermalyze real-time image analysis software provides an extensive set of analysis tools to help you understand the thermal characteristics of your specific application. The ability to create strip charts and line profiles, record and play back image sequences, and create regions of any size and shape enables you to analyze data in many different and insightful ways. And to help you share thermal images with colleagues, Thermalyze LT gives you the ability to save and export images and data in various file formats.



Regions

Create regions to calculate the maximum, minimum, and mean temperatures in one or more areas of thermal images. Use the region toolbar to draw regions to enclose areas of any size and shape.

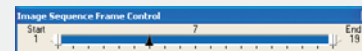
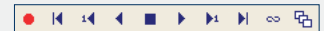


Set properties for each region separately. Specify high and low temperature limits to test the max, min or mean temperatures in each region.



Image Sequences

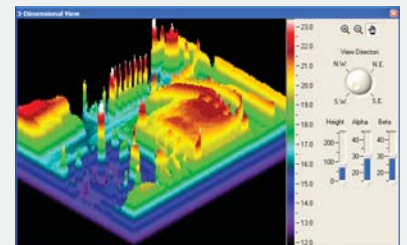
Record and play back image sequences using familiar multimedia controls.



Use the image sequence frame control to quickly locate and display individual frames of an image sequence.

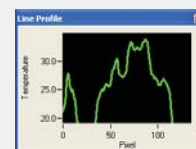
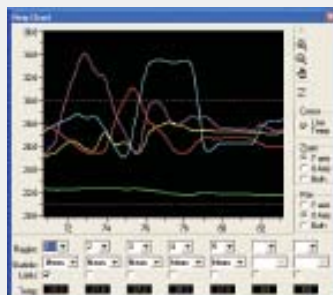
Graphics Tools

Real-time 3-D views of thermal images highlight temperature gradients and changes.



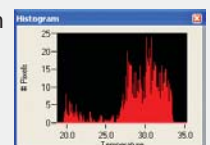
Strip Chart

Plot the max, min or mean temperature from selected regions in real-time. Strip chart data can be saved and exported in ASCII text format.

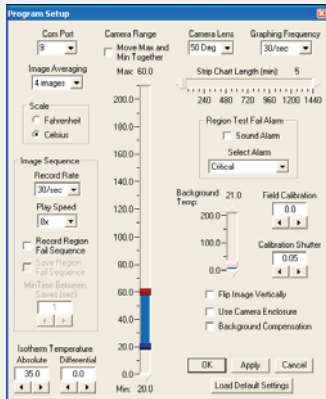


Draw line regions anywhere on an image, in any direction, and display the temperature profile along those lines.

Plot the histogram of temperature values within any region.



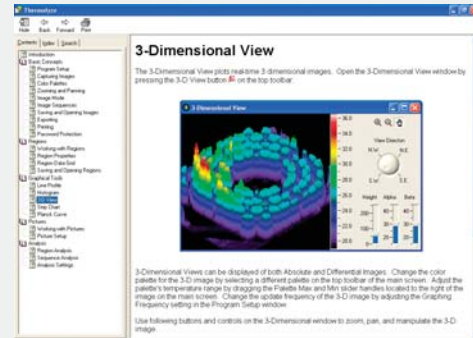
Program Setup



Customize and optimize software and camera operation.

Password protection

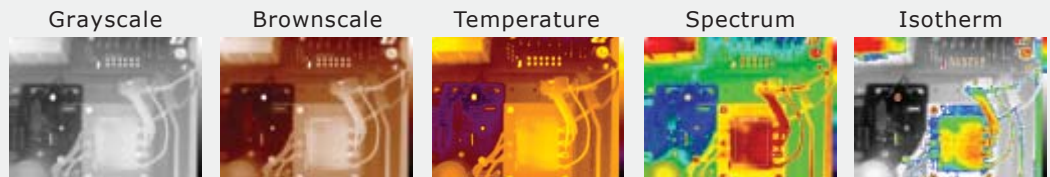
HTML Help



Extensive HTML help shows you how to use each software feature.

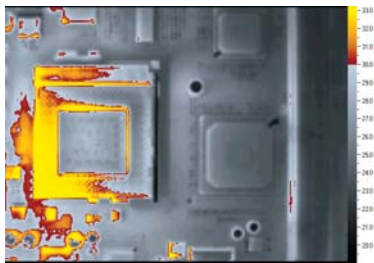
Color Palettes

Five carefully designed color palettes help you easily identify small temperature variations.

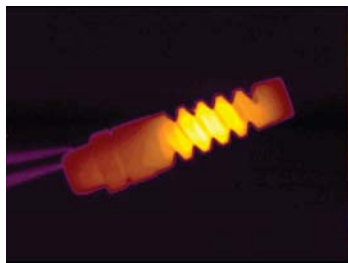


Applications

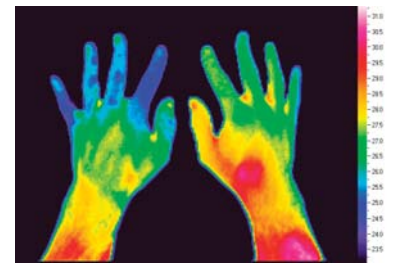
Thermal imaging provides accurate and detailed temperature information that is difficult, if not impossible, to obtain by using traditional temperature sensors such as thermistors and thermocouples. Thermal imaging is used in hundreds of research and product design, development, and testing applications. Although the number of different applications is too large to list here, we have included a few representative application images below to help you understand how R&D can help in your specific application.



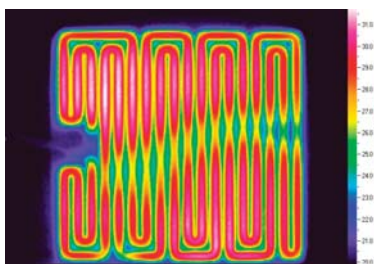
circuit board troubleshooting



electrical connector design



cardiovascular diagnosis research



heating element design



packaging design



electronics inspection

Why Choose OptoTherm R&D ?

At the heart of R&D is the InfraSight thermal imaging camera that captures thermal images at 30 frames per second, obtains the temperature at 76,800 individual points on an image, and can detect temperature changes smaller than 0.05°C. With this level of spatial and temperature resolution, R&D can identify extremely small but significant temperature variations and changes that can help you better understand the thermal behavior of your specific product, components or system.

Specifications

Measurement

Temperature Range: 0 to 300°C (32 to 572°F)
Spatial Resolution: 0.07 mm (0.003 in) minimum
Accuracy: +/-2°C or 2% of reading (whichever is greater)
Sensitivity (NETD): <0.05°C
Sample Rate: 30 frames per second

Optics

Field of View: 50° x 37.5°
Focus Distance: 20 mm (0.8 in) to infinity

Physical

Ambient Operating: 15 to 35°C (59 to 95°F)
Ambient Storage: -40 to 80°C (-40 to 176°F)
Camera Dimensions: 89 x 76 x 200 mm (3.5 x 3.0 x 7.9 in)
Camera Weight: 1.5 kg (3.0 lb)
Power Consumption: 1.2 W
Mounting: 1/4"-20 internal threads

Detector

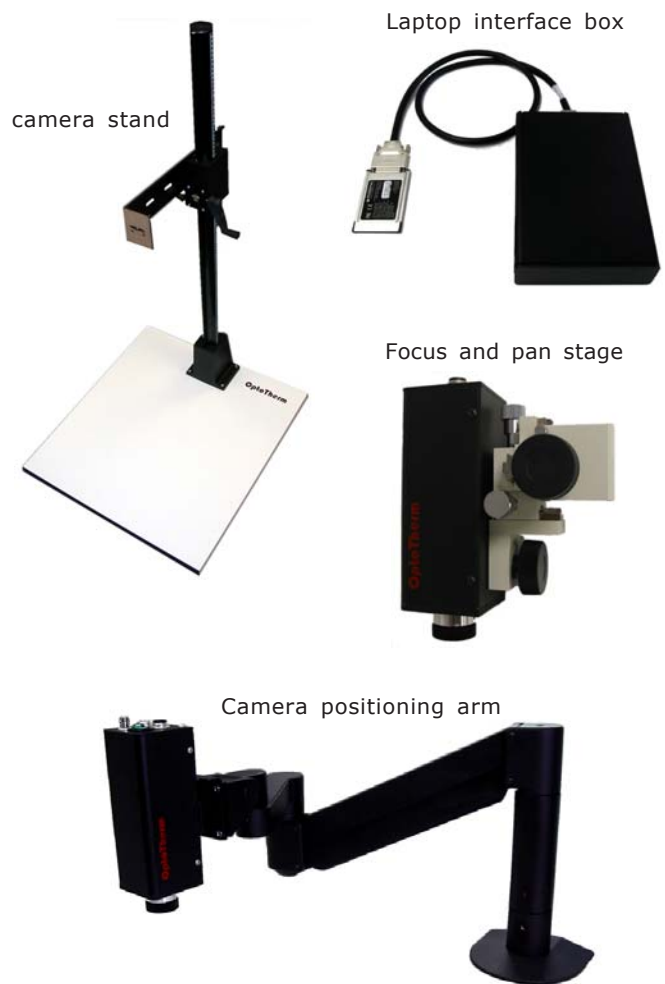
Thermal Time Const: 21 msec
Start-Up Time: 5 sec
Detector: Uncooled focal plane array
Array Size: 320 x 240 elements
Spectral Response: 7-14 µm
Moving Parts: Micro shutter

System Components

- InfraSight RD 320 thermal imaging camera
- Wide angle lens
- Thermalyze LT real-time image analysis software
- Camera Link video board (PCI)
- Camera Link video cable
- USB camera communication cable
- Camera power supply (12 Vdc)
- Plastic carrying case
- R&D User Manual
- Thermalyze LT Software User Manual

Accessories

- Adjustable 44" camera stand
- Adjustable 27.5" camera stand
- Camera positioning arm with universal mount
- Focus and pan stage
- Laptop interface box with Cardbus connector
- Heavy duty camera tripod
- High accuracy calibration (+/- 0.5°C)
- Thermalyze off-line image analysis software



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