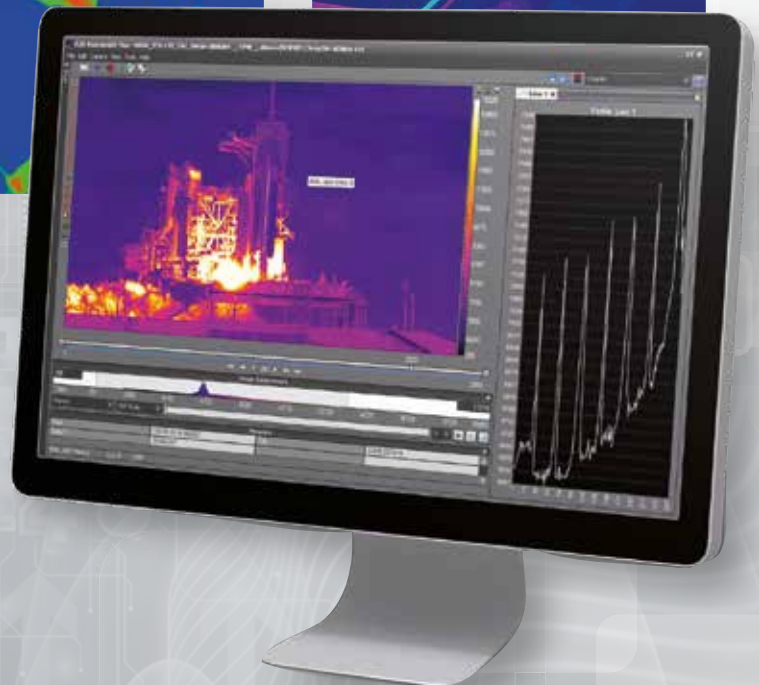
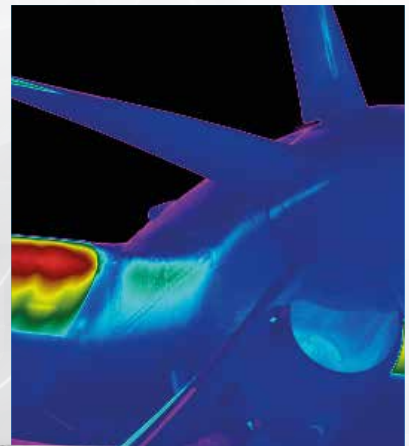
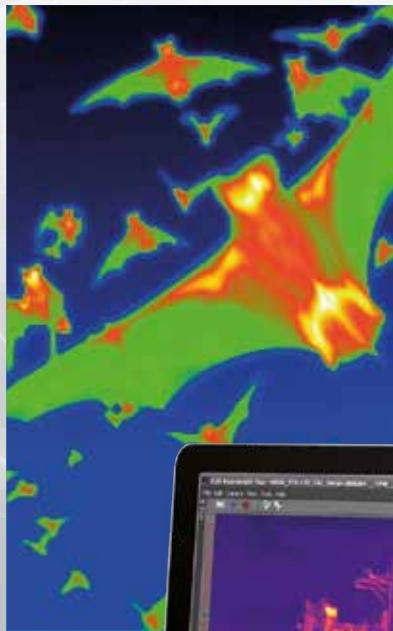
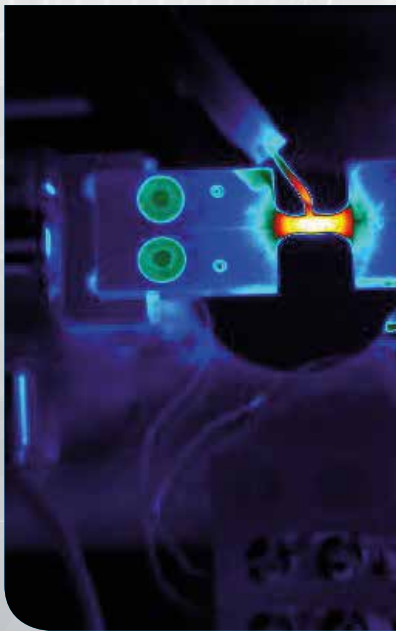


# FLIR RESEARCHIR

THERMAL MEASUREMENT, RECORDING, AND ANALYSIS  
SOFTWARE FOR RESEARCH AND SCIENCE



- Easy Camera Connectivity
- Customizable Workspaces
- Snapshot and Movie Recording
- Multiple Measurement Modes
- Chart, Graph, and Plot Reporting
- Self Viewing File
- MATLAB® Compatible

# FLIR RESEARCHIR

**ResearchIR is a powerful and easy-to-use thermal analysis software package for FLIR Research & Development / Science cameras. It provides camera control, high-speed data recording, image analysis, and data sharing.**

**Acquire** – The ResearchIR software connects directly to FLIR Research and Science cameras via USB, Firewire, Gigabit Ethernet, and Camera Link to acquire thermal snapshots or movie files. ResearchIR supports multiple acquisition options, including high-speed burst mode recording to RAM or slower speed data logging to a hard drive. Users can easily customize recording options, such as: start times, end times, and the number of frames to acquire.

**Analyze** – ResearchIR performs real-time image analysis, with an extensive set of measurement tools including spots, lines, and areas. ResearchIR supports Preset Sequencing and superframing for analysis of scenes with larger temperature differences.

ResearchIR provides an array of charting and plotting capabilities including line profiles, histograms, and temporal plots for all of the measurement tools.

**Share** – Image and plot data from ResearchIR can be exported graphically as a Bitmap or CSV file for reporting and analysis in other software programs. Additionally, every frame of data can be easily exported to 3rd party analysis software via export as CSV, 32-bit TIFF, MATLAB®, etc. ResearchIR's exclusive Self Viewing Files (SVFs) allow users to share discrete copies of ResearchIR data sets with other viewers. See the back cover for more information.

**Multiple Measurement Analysis Tools** – Provides fast, detailed image analysis using spot, line, area and freeform measurement tools.

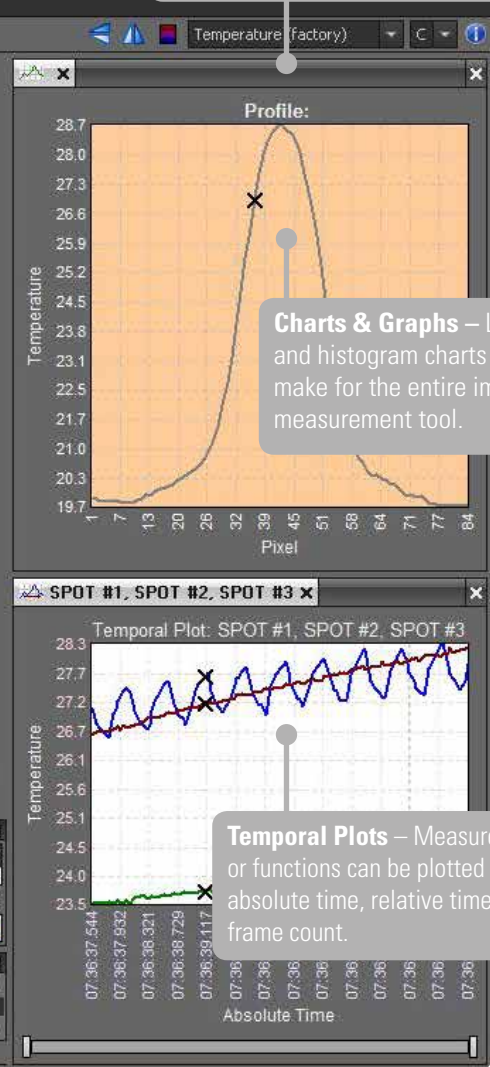
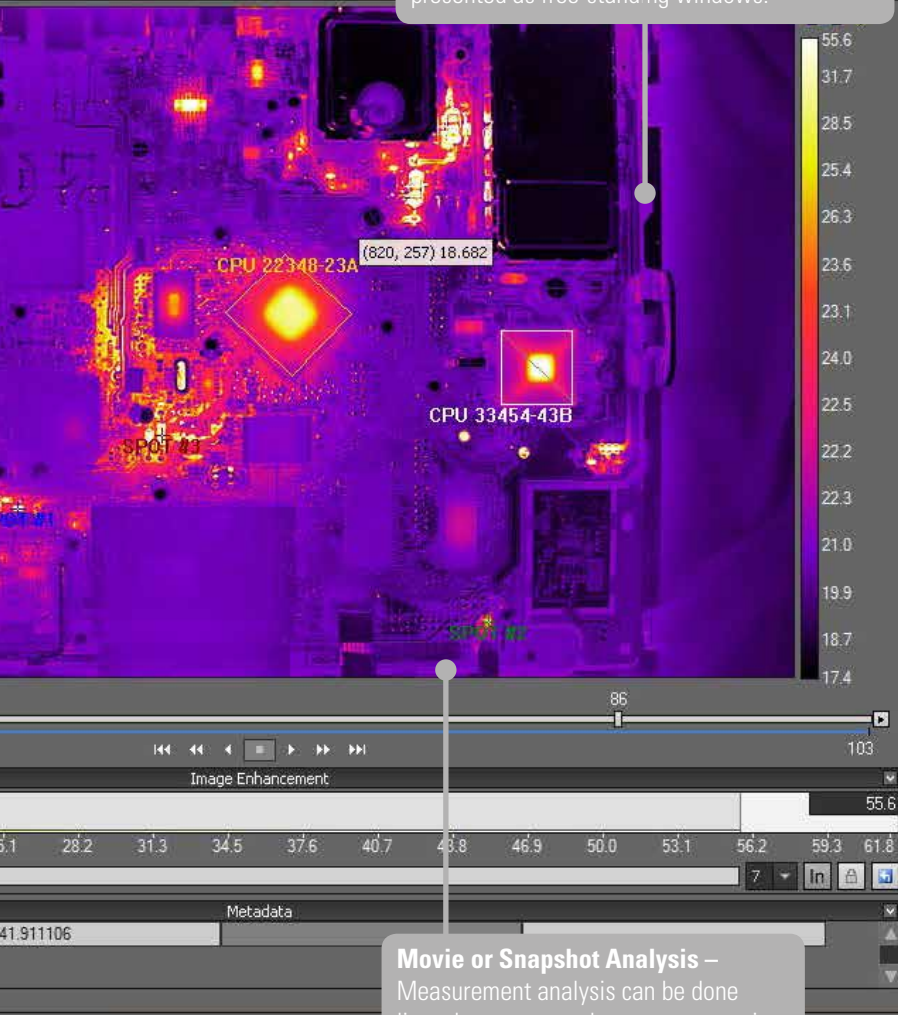


**Advanced Tools** – These tools allow users to set object parameters, view the source information, set the image segmentation tool, and display the explorer file manager.

673.fcf (5C8303 1344x784 ADBits: 14)

**Customized Workspaces** – Use the “Float & Dock” interface to arrange the display of imagery, data, charts, and plots. Charts can be “docked” into the ResearchIR workspace or presented as free-standing windows.

**Temperature, Radiance, or Digital Counts Measurement** – Toggle between digital counts, radiance, or temperature units when displaying, recording, or analyzing imagery.



**Charts & Graphs** – Line profiles and histogram charts are easy to make for the entire image or any measurement tool.

**Temporal Plots** – Measurement tools or functions can be plotted against absolute time, relative time, or frame count.

**Movie or Snapshot Analysis** – Measurement analysis can be done live when connected to a camera, or in playback with recorded snapshots and movie sequences.

Stats

	CPU 22348-23A	CPU 33454-43B	SPOT #1	SPOT #2	SPOT #3
Statistic (units)					
Mean [C]	18.5	18.3	22.7	23.2	19.8
Std. Dev. [C]	0.7	1.0	0.5	0.8	0.8
Center [C]	(752.5, 360.5) 20.3	(1044.5, 422.5) 21.0	(602.0, 496.0) 22.7	(668.0, 500.0) 23.2	(965.0, 374.0) 19.8
Maximum [C]	(752.342) 20.5	(1044.422) 21.0	(602.499) 22.7	(668.500) 23.2	(965.374) 19.8
Minimum [C]	(708.369) 17.9	(1083.460) 18.0	(1005.440) 17.9	(602.499) 22.7	(958.500) 23.2
Number of Pixels	10358	64	6888	1	1
Single Pixel Area [cm <sup>2</sup> ]	6.7600e-004	6.7600e-004	6.7600e-004	6.7600e-004	6.7600e-004
Area [cm <sup>2</sup> ]	7.00	0.0563	4.66	6.7600e-004	6.7600e-004
Length [cm]	N/A	3.05	N/A	N/A	N/A
Emittance	1	1	1	1	1
Distance [m]	0.5	0.5	0.5	0.5	0.5

Summary: SPOT #1 - SPOT #2: 0.480138, SPOT #1 - SPOT #3: 3.30562

**Statistics Table** – For viewing measurement tool statistics and creating custom functions for additional analysis.

## Additional ResearchIR Features

**Emissivity Calculator** – The emissivity value for any measurement tool can be adjusted manually or calculated by using the built in Emissivity Calculator.

**Spatial Calibrations** – Used to calibrate image pixels and measurement tools to length and area units like millimeters, meters, inches, and feet.

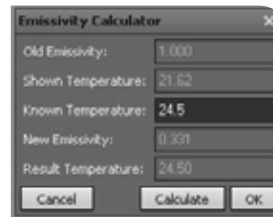
**Custom Thermographic and Radiometric Calibrations** – A calibration wizard guides you step-by-step through the creation of your own thermographic and radiometric calibrations.

**Measurement Function Editor** – Create mathematical functions for custom measurement analysis and graphically present them on temporal plots.

**Self Viewing Files** – SVFs are a way to share your thermal snapshots, movies, and data with others who do not own a ResearchIR license. SVFs combine a unique thermal data file with the functions of ResearchIR into a single executable file. This file can be shared with others, allowing them to run the SVF on any Windows computer and access the full power of ResearchIR for playback and analysis without any software installation.

**MathWorks® MATLAB Compatible** – Access MATLAB® scripts directly in ResearchIR for customized image analysis and processing.

**ResearchIR Demos & Training** – To see ResearchIR in action, watch a web demonstration, or view tutorial videos, visit [www.flir.com/ResearchIR](http://www.flir.com/ResearchIR).



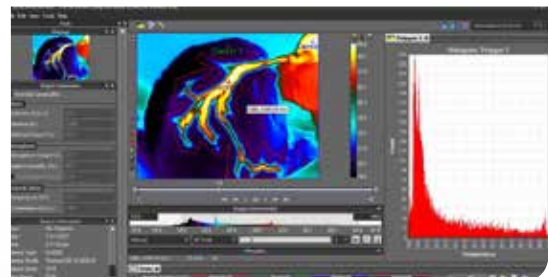
Emissivity Calculator



Spatial Calibration



Measurement Function Editor



Self Viewing File

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