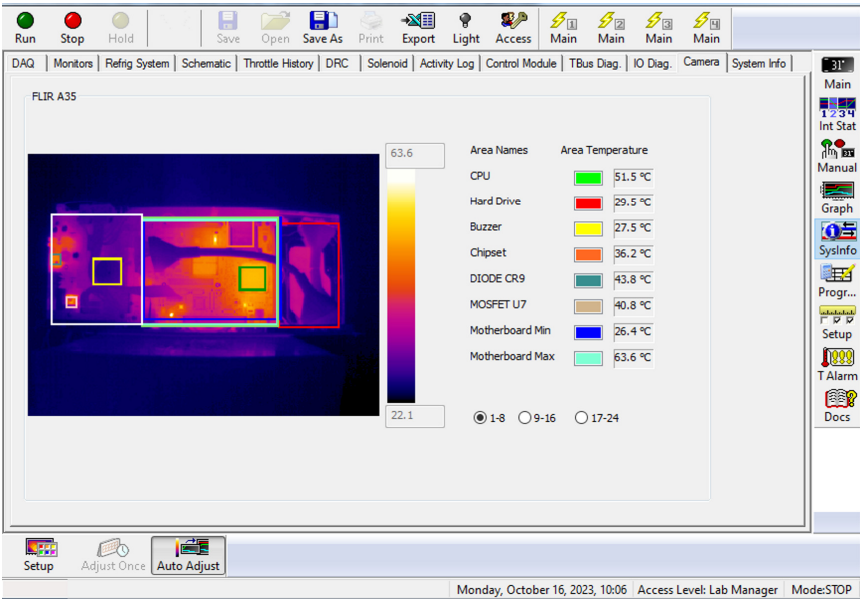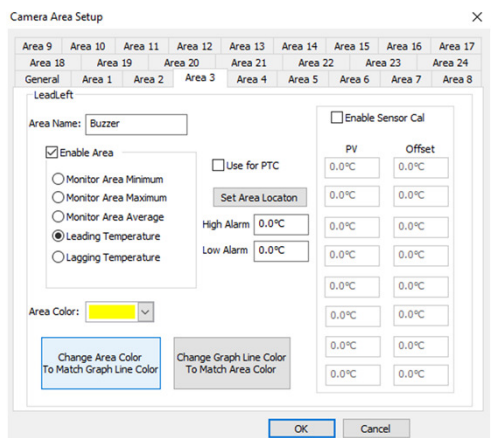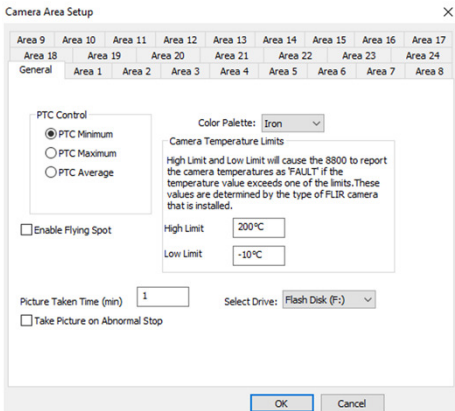# FLIR Camera Upgrade

Seamless Integration

For a growing number of industries, thermal images with the information equivalent of thousands of thermocouples are a new reality. Now, those images can be streamed seamlessly to your controller, summarized, applied, saved and included in test reports. A FLIR A35 camera is built into the patented Universal Port design for easy upgrade in the field and even swapping for other Universal Port applications as needed. With 320x256 pixels of resolution and field-of-view options ranging from the broad 69° lens down to a targeted 13°, previously unimaginable detail becomes readily available. Better still, a dry air curtain protects both sides of the robust germanium infrared window so this hardware can be used across the full operating range of the chamber, even if frost or condensation forms on other surfaces.

Easy to Use

Building on a long tradition of intuitive customization, the 8800 controller now supports a wide range of control and documentation capabilities with the FLIR camera hardware.   Color palette, temperature scale (including the option to auto-scale) and saving options are all available from a user-friendly Camera Setup page so users get detailed feedback in real time. By saving an image at key events and set intervals, time lapse video can be saved to an external drive for future inspection. Fast, accessible thermal imaging can transform the way we view environmental testing.

FLIR A35 Camera	
Resolution	320x256 IR pixels, 14-bit temperature linear
Thermal Sensitivity	<0.05 °C @ +30 °C
Accuracy	±5 °C (±9 °F) or ±5% of reading
Field of View (FOV)	Lenses available from 69°x56° down to 13°x 11°
Object Temperature Range*	-40 °C to +550°C (-40 to +1022 °F)
Calibration	Automatic in hardware, offset tables available in software
Detector Type / Range	Uncooled VOX microbolometer (7.5-13 μm)
Ethernet, communication	GigE Vision, GenICam compatible
Ethernet, power	Power over Ethernet, PoE injector included
Additional Hardware	
Mounting Platform	Universal Port or chamber retrofit
Image Mobility	Static after camera is mounted (image correlation to UUT will not change)
Infrared Window	Germanium with 8-12 μm BBAR coating
Frost/Condensation Protection	Dry air purge inside and outside window
Additional Hardware	Fixtures and backdrops available to avoid infrared reflection
Software	
User Defined Areas	Up to 24
Summary Temperatures	Maximum, Minimum, Average, Leading, Lagging
Design Applications	Monitor temps logged with TCs, Product Temp Control, Dewpoint Control
Image Saving	Export .img, .bmp or .raw file to external location on demand
Video	Time-lapse of test saves image at specified intervals (in minutes) and on abnormal Stop. Video images saved to external location.

* Thermal imaging may record object temperatures in excess of maximum chamber air temperature

Enhanced Control

Thermal imaging also supports and augments traditional location-based temperature control. Each area may be set to record its Maximum, Minimum or Average temperature. Also included are options to Lead or Lag the direction of change. For example, a Lagging area would show the minimum pixel temperature in the selection box during a warming ramp, but the maximum temperature during a cooling ramp to help ensure that every visible part of the UUT reached the temperature of a guaranteed soak. These synthesized camera temperatures are summarized in the Camera page with their user-provided names and logged alongside conventional TC or RTD devices on graphs and charts throughout the controller. Alarm notifications are configurable at Setup and easy color syncing facilitates intuitive viewing of graph results. When camera channels are being used for Product Temperature Control, this fact is noted on key control screens.

At the end of the day, testing with a Thermotron chamber is about bringing the world into your lab, seeing what will happen "out there" with all the tools available "in here". The FLIR camera upgrade offers a powerful new window into the effects of your test, literally giving a better picture to facilitate better decisions, faster design iteration and more confident product release.

For more than 60 years, Thermotron has provided quality environmental test equipment. We've worked to establish a trusted reputation among our peers, and when people hear the name *Thermotron*, they have confidence in the testing of their own product. We've been building our reputation since 1962; now it's your turn.

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