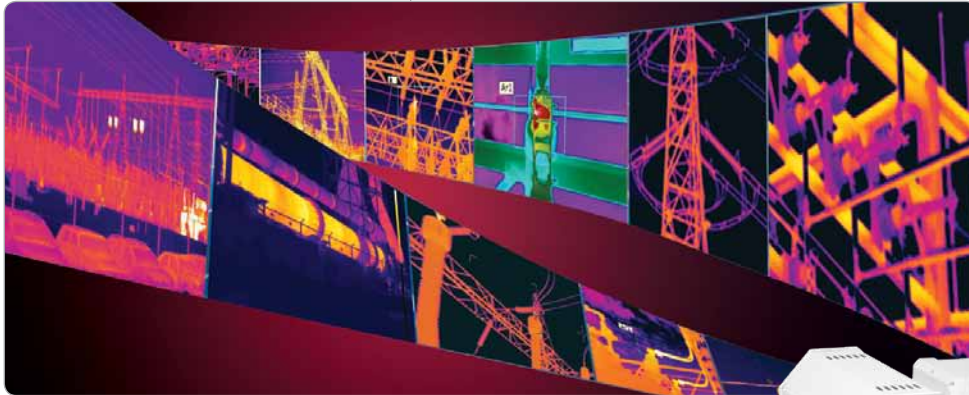


Thermal Cameras for Remote Monitoring
A310 f & A310 pt



Remote Monitoring Inside & Outside of Critical Assets

Facility operations and safety personnel have been using FLIR cameras to gather non-contact temperature measurements and condition monitoring data for decades.

Security professionals around the world have been using FLIR thermal cameras for perimeter and critical asset security for years.

Why not use the same cameras to do both?

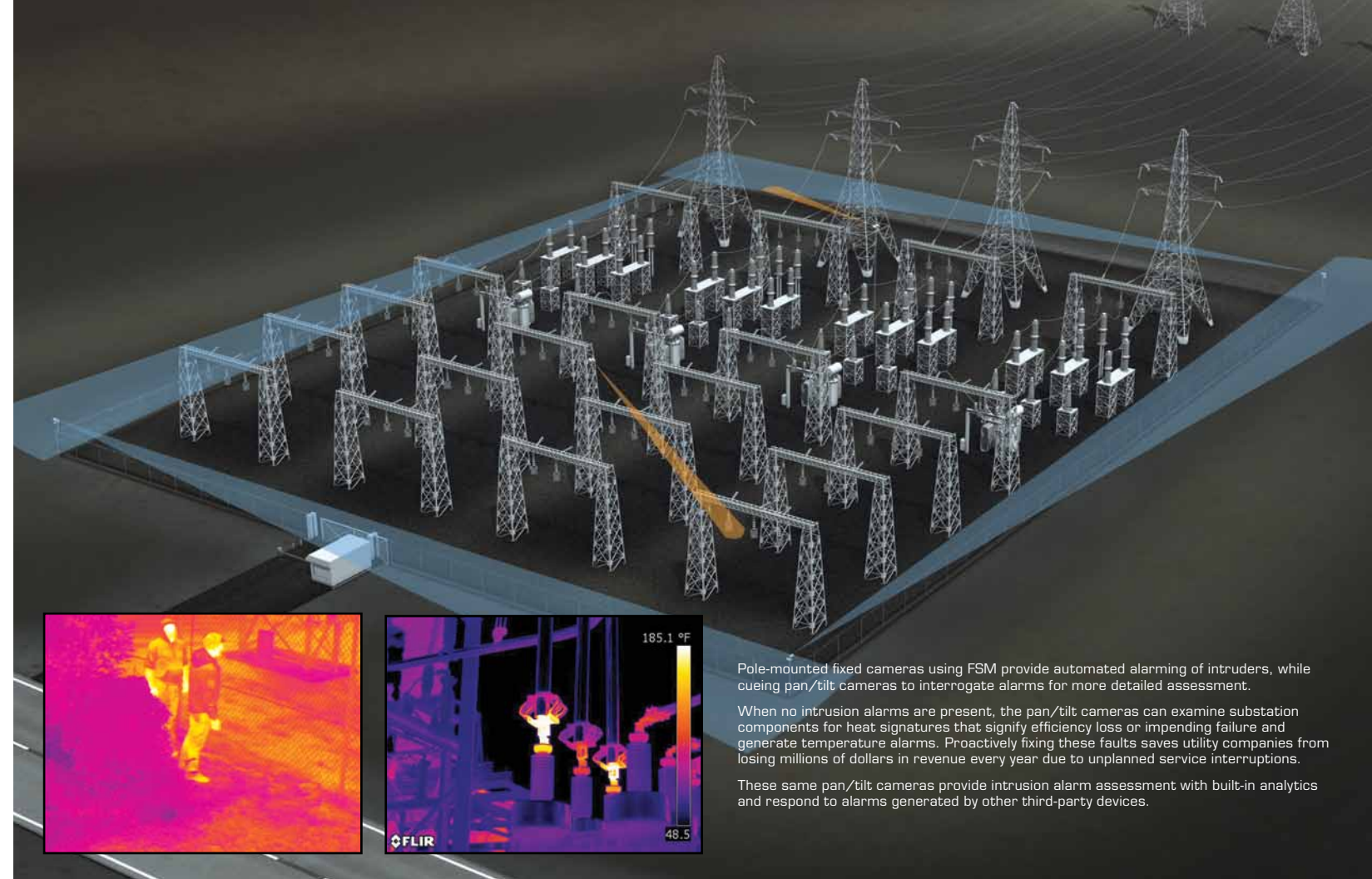
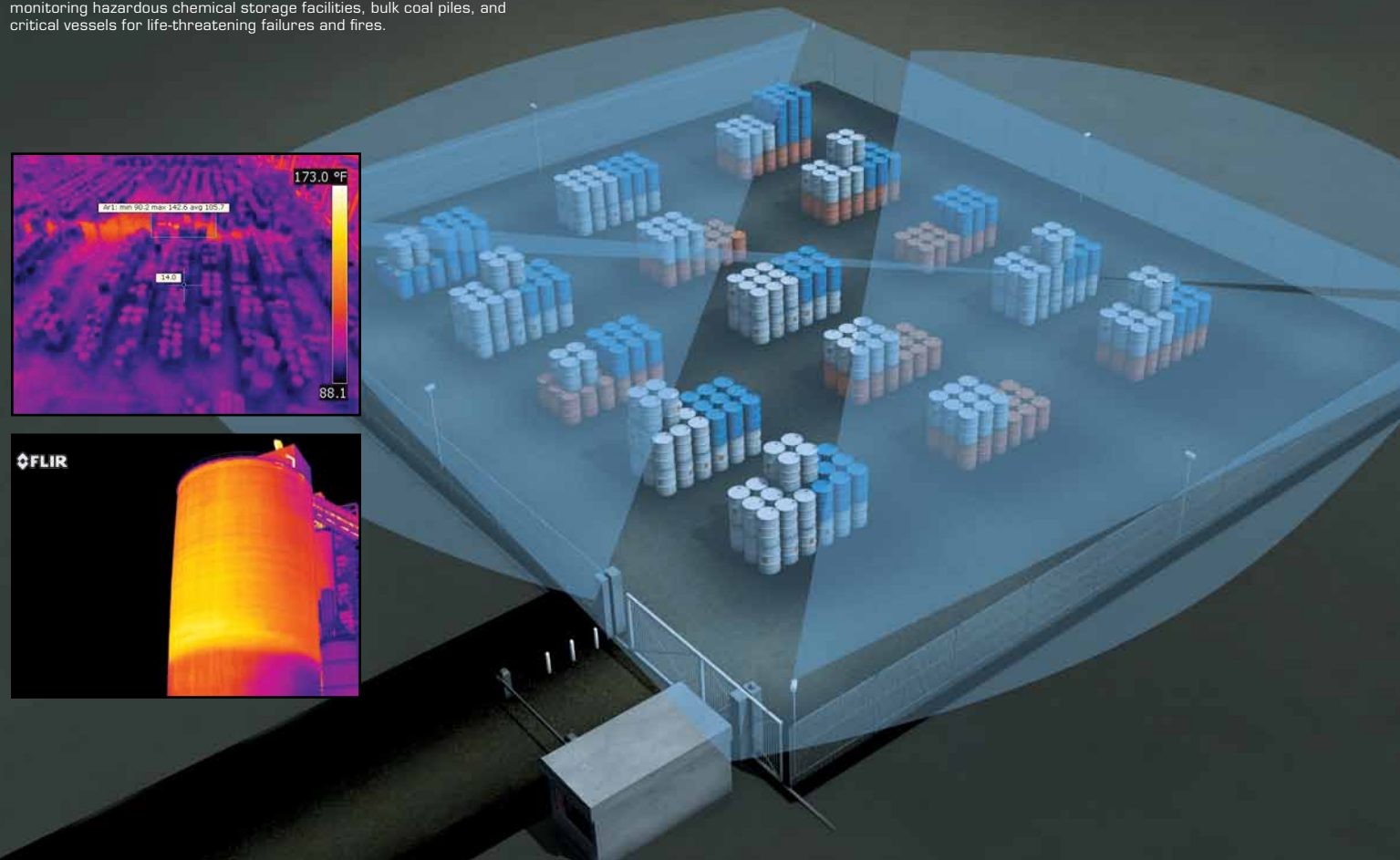
By merging our industry-leading thermal imaging cameras with thermal video analytics and non-contact temperature measurement, the A310 Fixed and Pan/Tilt camera systems create a multi-role solution for perimeter remote facility safety monitoring and intrusion detection.

With FLIR Sensors Manager (FSM) you can use your A310 f and A310 pt systems to measure and display actual object temperatures and generate alarms when thresholds are exceeded, even at remotely monitored facilities.

A310 f and pt cameras give you:

- *Equipment monitoring to anticipate unscheduled failures*
- *Alarms based on actual object temperatures exceeding pre-set thresholds*
- *Wide-area surveillance for fire detection and monitoring of critical materials*
- *Perimeter security with thermal imaging and analytics*

Strategically positioned cameras send alarms when a concentrated area shows a temperature increase. This is a proven application for monitoring hazardous chemical storage facilities, bulk coal piles, and critical vessels for life-threatening failures and fires.



Pole-mounted fixed cameras using FSM provide automated alarming of intruders, while cueing pan/tilt cameras to interrogate alarms for more detailed assessment.

When no intrusion alarms are present, the pan/tilt cameras can examine substation components for heat signatures that signify efficiency loss or impending failure and generate temperature alarms. Proactively fixing these faults saves utility companies from losing millions of dollars in revenue every year due to unplanned service interruptions.

These same pan/tilt cameras provide intrusion alarm assessment with built-in analytics and respond to alarms generated by other third-party devices.

Remote. Control.

FLIR Sensors Manager (FSM) gives you control of all your FLIR sensors – thermal imagers, visible light cameras, pan/tilts, etc. – from a single location anywhere on the planet.

FSM is easy to install and will instantly recognize a new sensor once you connect it to the network. In addition to standard point-to-point controls such as zoom, pan, tilt and temperature measurement, you can also:

- *Perform Video Analytics – Set up alarms for video motion and target detection.*
- *Manage Scan Routines – Run, change or interrupt scan routines in real time to take full advantage of your sensors network.*
- *Create Video Walls – Configure your preferred video mosaic from network and analog frame grabber sources.*
- *“E-stab” (Electronic Stabilization) – See a steady image from sensors mounted where they might be affected by wind or other vibrations.*
- *Capture Images – Save images for deeper analysis.*
- *Create Panoramas – Stitch together individual images from multiple sensors and expand your analytical resources.*
- *Customize User Profiles – Personalize how you want to manage your sensors.*

Go to [FLIR.com/RemoteMonitoring](https://www.flir.com/RemoteMonitoring) to see a video demonstration!



Imaging Specifications



Thermal Camera	A310 f	A310 pt
Detector Type	Uncooled Microbolometer	
Spectral Range	7.5 – 13.0 μm	
Resolution	320 x 240	
Detector Pitch	25 μm	
NETD	<50 mK	
Frame Rate	30 Hz	
Command & Control	Ethernet/IP, Modbus TCP, TCP, UDP, SNMP, RTSP, RTP, HTTP, ICMP, IGMP, ftp, SMTP, SMB (CIFS), DHCP, MDNS (Bonjour), uPnP	
Measurement		
Standard Temperature Range	-20°C to 120°C (-4°F to 248°F) 0°C to 350°C (32°F to 662°F)	
Accuracy	$\pm 2^\circ\text{C}$ or $\pm 2\%$	
Temperature Measurement Analytics	Spotmeters, Isotherms, Areas	
Emissivity Correction	Variable from 0.01 to 1.0	
Measurement Corrections	Global and individual object parameters	
Optics		
Camera f/#	f/1.3	
Integrated Lens Focal Length	18 mm	
Field of View (FOV) / Minimum Focus Distance	25° x 18.8° / 0.4 m (1.31 ft.) Available as options: 7°/15°/45°/90°	
Focus	Automatic or Manual (Motorized)	
Zoom	1–8x continuous, digital, interpolating zooming on images	
Image Presentation		
Ethernet Video	MPEG-4	
Analog Video	NTSC/PAL	
General		
Weight	~11 lb	~39.5 lb (configuration dependent)
Input Voltage	10-30 VDC	21-30 VAC, 21-30 VDC
Power Consumption	25 W (max w/ heaters)	24 VAC: 85 VA (max w/o heaters); 215 VA (max w/ heaters) 24 VDC: 65 W (max w/o heaters); 195 W (max w/ heaters)
Operating Temperature Range	-15°C to 50°C (5°F to 122°F)	-25°C to 50°C (-13°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)
Encapsulation	IP 66 (IEC 60529)	IP 66 (IEC 60529)
Bump / Vibration	25 g (IEC 60068-2-29) / 2 g (IEC 60068-2-6)	5 g (IEC 60068-2-27) / 2 g (IEC 60068-2-6)

Day/Night CCD Camera	A310 pt Only
Camera Type	Sony FCB-EX1010
Sensor Type	1/4" Exview HAD CCD
Field of View	57.8° (h) to 1.7° (h)
Focal Length	3.4 mm to 122.4 mm
Zoom	36x Optical zoom, 12x E-zoom
F/#	1.6 to 4.5
Effective Pixels (NTSC)	380,000
Pan/Tilt Control	
Point to Point (stand alone), Ethernet, Network Enabled	Standard
Serial	RS-232/-422; Pelco D, Bosch
Pan/Tilt Performance	
Pan Angle/Speed	Continuous 360°; 0.1° to 60°/sec
Tilt Angle/Speed	45° to -45°; 0.1° to 30°/sec



BOSTON

FLIR Systems, Inc.
9 Townsend West
Nashua, NH 03063
USA
PH: +1 866.477.3687

PORTLAND

Corporate Headquarters
FLIR Systems, Inc.
27700 SW Parkway Ave.
Wilsonville, OR 97070
USA
PH: +1 800.464.6372

SANTA BARBARA

FLIR Systems, Inc.
70 Castilian Dr.
Goleta, CA 93117
USA
PH: +1 800.464.6372

CANADA

FLIR Systems, Ltd.
920 Sheldon Ct.
Burlington, ON L7L 5K6
Canada
PH: +1 800.613.0507

FLIR.com/RemoteMonitoring
NASDAQ: FLIR