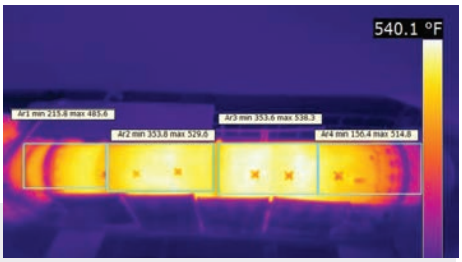
THERMAL SMART SENSOR CAMERA

FLIR A400/A700™ SERIES

The FLIR A400/A700-Series, when configured for Smart Sensor capabilities, offer advanced thermal imaging paired with edge computing and industrial internet of things (IIoT) for simplified inclusion in new or existing networks. With multiple field-of-view choices, motorized focus control, and unrivaled network connectivity, these automation cameras can tackle the most complex remote monitoring, alarming, and analytics objectives. Automation system solution providers get a running start with a camera that is easy to add, configure, and operate in HMI/SCADA systems. Optimize Process Control and improve quality assurance through inline thermal inspections. Identify abnormal conditions before a failure so maintenance doesn't impact uptime. FLIR A400/A700-Series cameras offer unmatched power and flexibility in thermal monitoring for improved product quality, productivity, maintenance, and safety.



FLEXIBILITY FOR EASIER INTEGRATION

Unrivaled network connectivity and built-in computing options

- Superior connectivity* through features such as Wi-Fi†, Modbus TCP, and Ethernet/IP—both of which simplify integration into HMI/SCADA systems
- ONVIF† accommodates standard security VMS and NVR solutions, including control of pan/tilt*
- Prepares for digitalization through MQTT protocol
- Integrates easily into web services with the REST API over XML or JSON

FLIR INNOVATIONS FOR SMARTER RESULTS

Tailor thermal imaging monitoring for any site's unique requirements

- Improves definition of areas of interest and object analysis with features like the polygon line function*
- Increases accuracy through external black-body correction function*
- Superior I/O control via Modbus TCP Master* enables integration with industrial automation systems using analog and digital control
- Compressed radiometric streaming* cuts bandwidth by 90%, making it possible to connect cameras and share data via Wi-Fi†

WORLD-CLASS THERMAL IMAGING CAPABILITIES

Designed with the features to deliver consistent, accurate results

- Provides superior image quality with up to 640 × 480 (307,200) thermal pixel resolution‡
- Offers a high measurement accuracy of ±2°C
- Improves temperature accuracy for objects near and far with precision motorized focus
- Increases contrast in even-temperature scenes and enhances edge detail in low light using FSX® (Flexible Scene Enhancement)* technology

*Advanced †Optional ‡Model dependent

SPECIFICATIONS

Image and Optical Data	Standard Config.	Advanced Config.
IR resolution	320 × 240 (A400) or 640 × 480 (A700)	
Visual resolution*	1280 × 960	
Thermal resolution	<30 mK to <50 mK, lens dependent	
Lenses	14°, 24°, and 42°	
IR Camera Focus	One-shot contrast, motorized, manual	
Measurement		
Object temperatures	-20°C to 2000°C (-4°F to 3632°F), 3 ranges	
Accuracy	±2°C (±3.6°F) or ±2% of reading	
Measurement analysis		
Standard functions	10 spotmeters, 10 boxes, 3 Deltas, 1 isotherm, 1 iso-coverage, 1 reference temperature	10 spotmeters, 10 boxes & mask polygons, 3 Deltas, 2 isotherm, 2 iso-coverage, 1 reference temperature, 2 lines, 1 polyline
Automatic hot/cold detection	Max./min. temperature value and position shown within box	
Scheduled response	sftp (image), SMTP (image and/or measurement data/result)	
Measurement frequency	Up to 10 Hz	
Measurement result read-out	Yes; common protocols include Ethernet/IP, Modbus TCP, MQTT, and REST API	
Alarm		
Alarm function	On any selected measurement function; digital in; internal camera temperature	
Alarm output	Yes: common output includes e-mail, EtherNet/IP, Modbus TCP, and RESTful API	
Video streaming, RTSP protocol		
Unicast	Yes	
Multicast	Yes	
Multiple image streams	Yes	
Video stream 0		
Source	Visual, IR, MSX®	
Contrast enhancement	FSX®, histogram equalization (IR only)	
Overlay	With, without	
Pixel format	YUV411	
Encoding	H.264/MPEG4/MJPEG	

Video stream 1	Standard Config.	Advanced Config.
Source	Visual	
Overlay	No	
Pixel format	YUV411	
Encoding	H.264/MPEG4/MJPEG	
Radiometric streaming		
Source	–	IR
Pixel format	–	MONO 16
Encoding	–	Compressed JPEG-LS; FLIR radiometric
Ethernet		
Interface	Wired; Wi-Fi*	
Connector types	M12 8-pin X-coded, female; RP-SMA, female	
Ethernet type & standard	1000 Mbps, IEEE 802.3	
Ethernet power	Power over Ethernet, PoE IEEE 802.3af class 3	
Ethernet protocols	Include EtherNet/IP, Modbus TCP, and MQTT	
Digital input/output		
Connector type	M12 Male 12-pin A-coded (shared with ext. power)	
Digital input	2× opto-isolated, Vin (low) = 0-1.5 V, Vin (high) = 3-25 V	
Digital output	3× opto-isolated, 0–48 VDC, max. 350 mA (derated to 200 mA at 60°C). Solid-state opto relay, 1× dedicated as fault output (NC)	
Power system		
Connector type	M12 Male 12-pin A-coded (shared with Digital I/O)	
Power consumption	7.5 W at 24 V DC typical; 7.8 W at 48 V DC typical; 8.1 W at 48 V PoE typical	
Wi-Fi*		
Connector type	Female RP-SMA	

The FLIR A-Series cameras are designed for configuration to your specific needs

*Optional feature

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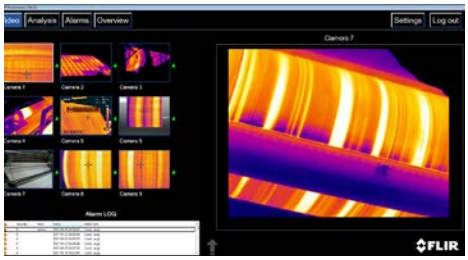
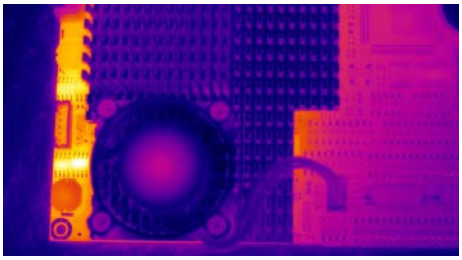
FLIR

THERMAL IMAGE
STREAMING CAMERA

FLIR A400/A700™ SERIES

The FLIR A400/A700-Series, when configured for Image Streaming, offer automation solution providers and industrial stakeholders the capabilities they need to accurately identify thermal issues across manufacturing processes. With multiple field-of-view choices, motorized focus control, and compressed radiometric image streaming, these automation cameras can tackle the most complex remote monitoring and temperature measurement objectives. Optimize Process Control and improve quality assurance through inline thermal inspections or identify abnormal conditions before a failure causes a production shutdown. The FLIR A400/A700-Series can also provide early detection for faster responses to potential fires, helping minimize injuries and equipment damage. FLIR A400/A700-Series cameras offer unmatched power and flexibility in thermal monitoring for improved product quality, productivity, maintenance, and safety.





FLEXIBILITY AND EASE OF INTEGRATION

Incorporate seamlessly into monitoring systems that meet a site's unique requirements

- GigE Vision compliant – the industry standard
- GenICam compliant – another important industry standard
- Supports both GigE and RTSP data-streaming protocols*
- Compatible with 3rd party SDK and application software support

FLIR INNOVATIONS FOR SMARTER RESULTS

Transform process control, QA, and condition monitoring with leading-edge technology

- Temperature linear output simplifies use of temperature data in third-party software
- Compressed radiometric streaming* cuts bandwidth by 90%, making it possible to connect cameras and share data via Wi-Fi†
- Reduced bandwidth also allows users to add cameras without expanding infrastructure, for an overall cost savings
- Simultaneously integrates with VMS and measurement applications using multi-image streaming*

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Measurement		
Object temperatures	-20°C to 2000°C (-4°F to 3632°F), 3 ranges	
Accuracy	±2°C (±3.6°F) or ±2% of reading	
Video streaming, RTSP protocol		
Unicast	–	Yes
Multicast	–	Yes
Multiple image streams	–	Yes
Video stream 0		
Source	–	Visual, IR, MSX®
Contrast enhancement	–	FSX®, histogram equalization (IR only)
Overlay	–	With, without
Pixel format	–	YUV411
Encoding	–	H.264/MPEG4/MJPEG
Video stream 1		
Source	–	Visual, IR, MSX®
Overlay	–	No
Pixel format	–	YUV411
Encoding	–	H.264/MPEG4/MJPEG
Radiometric streaming, RTSP		
Source	–	IR
Pixel format	–	MONO 16
Encoding	–	Compressed JPEG-LS; FLIR radiometric
Video/radiometric streaming, GVSP (GigE Vision) protocol		
Unicast	Yes	
Multicast	Yes	
Multiple image streams	No	

Video stream 0	Standard Config.	Advanced Config.
Resolution	Visual, IR, MSX®, 640 × 480 pixels	
Contrast enhancement	FSX® (optional), histogram equalization (IR only)	
Overlay	With, without	
Pixel format	YUV411 or MONO 8	
Encoding	Uncompressed	
Radiometric streaming, GVSP		
Resolution	320 × 240 (A400) or 640 × 480 (A700)	
Source	IR	
Pixel format	MONO 16	
Encoding	FLIR radiometric; temperature linear	Compressed JPEG-LS; FLIR radiometric; temperature linear
Ethernet		
Interface	Wired; Wi-Fi*	
Connector types	M12 8-pin X-coded, female; RP-SMA, female	
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Connector type	Female RP-SMA	

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*Optional feature

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