



COMPACT THERMAL IMAGE STREAMING CAMERA

FLIR A50/A70



FLIR A50 and A70 Thermal Image Streaming cameras are the right choice for users who want camera control capabilities and image streaming over Ethernet, as well as flexibility to perform analytics and raw data collection on thermal characteristics using preferred software applications. Thermal image and data output can easily be integrated into custom solutions with the GigE Vision and GenICam support. With options for Wi-Fi, an integrated visual camera, compressed radiometric image streaming, and ONVIF S compatibility, these small and lightweight fixed-focus automation cameras will optimize process control and quality assurance to improve yield, product quality, through-put time, and lower costs.



IMPROVE PRODUCTION AND QUALITY

Quickly access thermal characteristics during production or QA processes to optimize production settings and product quality

- Accurately measure temperatures with up to 640×480 (307,200 pixels) thermal resolution and $\pm 2^\circ\text{C}$ accuracy
- Reveal thermal detail with low-noise imagery and data
- Extract temperatures from each pixel without need for calculation using temperature linear mode and monochrome 16-bit image streaming
- Identify targets easier using optional simultaneous thermal and visible image streaming from a single camera with MSX®



TROUBLE-FREE INTEGRATION

Simplify integration efforts with non-proprietary industry standard connectivity, data and image streaming, and camera control

- GigE Vision and GenICam compliant for camera control and thermal/visual image video streaming into third-party machine vision applications
- Full support for compressed radiometric streaming using FLIR Atlas SDK (Advanced Configuration only)
- SNMP trap and advanced firewall protection allows multiple network devices to securely operate together
- Simple configuration via standard web browser



RUGGED, COMPACT, EASY INSTALLATION

Meet the demands of industrial environments and installations

- Built with an IP66 rating to withstand harsh environmental conditions
- Ensure operation in dynamic settings thanks to heavy-duty M8/12 connectors
- Easily install the compact, lightweight camera in any location, with multiple mounting options



SPECIFICATIONS

Image & Optical Data	Standard Configuration	Advanced Configuration
IR resolution	464 × 348 (A50), 640 × 480 (A70)	
Visual Resolution	1280 × 960 pixels (optional)	
Thermal Resolution	A70: 29°: <45 mK, 51°: <45 mK, 95°: <60 mK A50: 29°: <35 mK, 51°: <35 mK, 95°: <45 mK	
Focus	Fixed, adjustable with included focus tool	
Spatial Resolution (IFOV)	A50: 29°: 1.2 mrad/pixel, 51°: 2.1 mrad/pixel, 95°: 4.0 mrad/pixel A70: 29°: 0.84 mrad/pixel, 51°: 1.5 mrad/pixel, 95°: 2.9 mrad/pixel	
FOV Options	29°, 51°, 95°	
Detector Pitch	A50: 17 µm, A70: 12 µm	
Spectral Range	7.5–14.0 µm	
Frame Rate	30 Hz	

Measurement

Object temperature range	-20°C to 175°C (-4°F to 347°F) 175°C to 1000°C (347°F to 1832°F)	-20°C to 175°C (-4°F to 347°F) -20°C to 250°C (-4°F to 482°F) 175°C to 1000°C (347°F to 1832°F)
Accuracy	±2°C (±3.6°F) or ±2% of reading, for ambient temperature 15°C to 35°C (59°F to 95°F) and object temperature above 0°C (32°F)	

Video Streaming, RTSP Protocol	Standard Configuration	Advanced Configuration
Unicast	Yes	
Multicast	Yes	
Radiometric RTSP	No	Compressed JPEG-LS (FLIR Radiometric)
Multiple Image Streams	Yes, visual camera option needed (P/N T300295)	

Video Stream 0

Streaming Resolution	640 × 480 pixels
Source	Visual / IR / MSX® / FSX® (visual camera is optional)
Contrast Enhancement	FSX® / Histogram equalization (IR only)
Overlay	With/Without
Encoding	H.264, MPEG4, or MJPEG

Video Stream 1

Streaming Resolution	1280 × 960 pixels
Source	Visual (visual camera is optional)
Overlay	No
Encoding	H.264, MPEG4, or MJPEG

Video streaming, GVSP (GigE Vision Streaming Protocol)		
Unicast	Yes	
Multicast	Yes	
Dual Video Streams	No (either IR, Visual, MSX, FSX or Radiometric 16 bit)	
Visual Resolution	640 × 480	
Pixel Formats	YUV411, MON08, MON016	
Radiometric Resolution	A50: 464 × 348, A70: 640 × 480	
Temperature Linear 16-bit	Yes	
Compressed JPEG-LS	No	Yes

Ethernet

Ethernet Communication	GigE Vision, GenICam (SFNC 2.4)
Connector Types	M12 8-pin X-coded, female; RP-SMA, female
Ethernet Interface	Wired, Wi-Fi (optional)
Ethernet Power	Power over Ethernet, PoE IEEE 802.3af class 3
Ethernet Protocols	IEEE 1588, SNMP, TCP, UDP, SNTP, RTSP, RTP, HTTP, ICMP, IGMP, sftp (server), FTP (client), SMTP, DHCP, MDNS (Bonjour), uPnP
Ethernet Standard	IEEE 802.3
Ethernet Type	1000 Mbps

Digital Input/Output

Connector Type	M12 Male 12-pin A-coded (shared with external power)
Digital Input	2× opto-isolated, Vin (low) = 0 to 1.5 V, Vin (high) = 3 to 25 V
Digital Output	3× opto-isolated, 0 to 48 V DC, max. 350 mA (derated to 200 mA at 60°C). Solid-state opto relay, 1× dedicated as fault output (NC)

Power

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
External Power Operation	24/48 V DC 8 W max
External Voltage	Allowed range 18 V to 56 V DC
Power Connection	M12 12-pin A-coded, male (shared with Digital I/O)

Wi-Fi

Connector Type	Female RP-SMA
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NASDAQ: FLIR

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www.calcercert.com

sales@calcercert.com

1.888.610.7664



COMPACT THERMAL SMART SENSOR CAMERA

FLIR A50/A70



FLIR A50 and A70 smart sensor cameras are ideal for users who want built-in, on-camera analytics and alarm capabilities for condition monitoring and early fire detection applications. With options for Wi-Fi, an integrated visual camera, and ONVIF S compatibility, FLIR A50/A70 cameras are a flexible, configurable solution to meet the unique needs of automation customers across a broad range of industries. The cameras are easy to add, set up, and operate in HMI/SCADA systems, offering automation system solution providers a running start. When used as a system component for cloud and Industrial Internet of Things (IIoT) solutions, A50/A70 cameras can help companies protect assets, improve safety, maximize uptime, and minimize maintenance costs.



MAXIMIZE UPTIME, PROTECT ASSETS, IMPROVE SAFETY

Quickly access thermal characteristics to catch potential failures, and detect fires before signs of smoke or flames

- Accurately measure temperatures with up to 640 × 480 (307,200 pixels) thermal resolution and $\pm 2^{\circ}\text{C}$ accuracy
- Reveal thermal detail with low-noise imagery and data
- Extract temperature data from each pixel using the FLIR Atlas SDK, compatible with the advanced smart sensor
- Identify targets easier with MSX[®] image enhancement, which embosses scene details from the optional built-in visual camera onto the full thermal image



TROUBLE-FREE INTEGRATION

Simplify integration efforts with thermal smart sensors that communicate with standard industrial protocols and video management systems

- Easy HMI & SCADA integration using common industrial protocols and alarm I/O
- SNMP trap and advanced firewall protection allows multiple network devices to securely operate together
- Simple configuration via standard web browser
- Simultaneous VMS video and alarm integration via ONVIF S compatibility (optional)



RUGGED, COMPACT, EASY INSTALLATION

Meet the demands of multiple application environments and installations

- Built with an IP66 rating to withstand harsh environmental conditions
- Ensure operation in dynamic settings thanks to heavy-duty M8/12 connectors
- Easily install the compact, lightweight camera in any location, with multiple mounting options



SPECIFICATIONS

Image & Optical Data	Standard Configuration	Advanced Configuration
IR resolution	464 × 348 (A50), 640 × 480 (A70)	
Visual Resolution	1280 × 960 pixels (optional)	
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FOV Options	29°, 51°, 95°	
Detector Pitch	A50: 17 µm, A70: 12 µm	
Spectral Range	7.5–14.0 µm	
Frame Rate	30 Hz	
Measurement		
Object temperature range	-20°C to 175°C (-4°F to 347°F) 175°C to 1000°C (347°F to 1832°F)	-20°C to 175°C (-4°F to 347°F) -20°C to 250°C (-4°F to 482°F) 175°C to 1000°C (347°F to 1832°F)
Accuracy	±2°C (±3.6°F) or ±2% of reading, for ambient temperature 15°C to 35°C (59°F to 95°F) and object temperature above 0°C (32°F)	
Measurement Analysis		
Standard Functions	10 Spotmeters, 10 Boxes, 3 Deltas (difference any value/reference/external lock), 1 Isotherm (above/below/interval), 1 Iso-coverage, 1 Reference temperature	10 Spotmeters, 10 Boxes or Polygons, 3 Deltas (difference any value/reference/external lock), 2 Isotherm (above/below/interval), 2 Iso-coverage, 2 Lines, 1 Polyline, 1 Reference temperature
Automatic Hot/Cold Detection	Standard Configuration	
Measurement Frequency	Up to 10 Hz	
Measurement Result Read-out	Ethernet/IP (poll), Modbus TCP server (pull), MQTT (push), REST API (read/write), Measurements and Still image (radiometric JPEG, visual 640 × 480, visual 1280 × 960), Web interface	Ethernet/IP (poll), Modbus TCP server/client (poll/push), MQTT (push), REST API (read/write), Measurements and Still image (radiometric JPEG, visual 640 × 480, visual 1280 × 960), Web interface
Alarm		
Alarm Function	On any selected measurement function, digital in, and internal camera temperature	
Alarm Output	Digital out, e-mail (SMTP) (push), Ethernet/IP (pull), file transfer (FTP) (push), Modbus TCP server (poll), MQTT (push), RESTful API (pull), and store image or video	Digital out, e-mail (SMTP) (push), Ethernet/IP (pull), file transfer (FTP) (push), Modbus TCP server/client (poll/push), MQTT (push), RESTful API (pull), and store image or video
Wi-Fi		
Connector Type	RP-SMA, female connector	

Video Streaming, RTSP Protocol	Standard Configuration	Advanced Configuration
Unicast	Yes	
Multicast	Yes	
Radiometric RTSP	No	Compressed JPEG-LS (FLIR Radiometric)
Multiple Image Streams	Yes, visual camera option needed (P/N T300295)	
Video Stream 0		
Streaming Resolution	640 × 480 pixels	
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Overlay	With/Without	
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Video Stream 1		
Streaming Resolution	1280 × 960 pixels	
Source	Visual (visual camera is optional)	
Overlay	No	
Encoding	H.264, MPEG4, or MJPEG	
Ethernet		
Interface	Wired, Wi-Fi (optional)	
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	Ethernet/IP, IEEE 1588, Modbus TCP, MQTT, SNMP, TCP, UDP, SNTP, RTSP, RTP, HTTP, HTTPS, ICMP, IGMP, sftp (server), FTP (client), SMTP, DHCP, and MDNS (Bonjour), uPnP	
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