Smart Sensor configuration (FLIR A50/A70)

P/N: T300389

Document identity

Publ. No.: T300389
Release: AA
Commit: 102008
Language:
Modified: 2025-01-27
Formatted: 2025-01-27

Website

http://www.flir.com

Customer support

http://support.flir.com

Disclaimer

Specifications subject to change without further notice. Camera models and accessories subject to regional market considerations. License procedures may apply. Products described herein may be subject to US Export Regulations. Please refer to exportquestions@flir.com with any questions.

General
When a camera is ordered the following must be selected, as a minimum: 1. one of the thermal cores: • FLIR A50 Thermal Core • FLIR A70 Thermal Core 2. one of the configurations: • Smart Sensor configuration (FLIR A50/A70) • Image Streaming configuration (FLIR A50/A70) The following options are available: • Antenna WLAN 2.4/5 GHz + Wi-Fi • Option, Visual camera including MSX • Advanced Smart Sensor configuration • Advanced Image Streaming configuration **Please note the following:** • The *Advanced Smart Sensor configuration* and the *Advanced Image Streaming configuration* require the *Smart Sensor configuration (FLIR A50/A70)* and the *Image Streaming configuration (FLIR A50/A70)*, respectively.

Imaging and optical data	
Infrared resolution	*Depending on Thermal Core used; see Thermal Core specification*
Thermal sensitivity (NETD)	*Depending on Thermal Core used; see Thermal Core specification*
Field of view (FOV)	*Depending on Thermal Core used; see Thermal Core specification*
Minimum focus distance	*Depending on Thermal Core used; see Thermal Core specification*
Focal length	*Depending on Thermal Core used; see Thermal Core specification*
Spatial resolution (IFOV)	*Depending on Thermal Core used; see Thermal Core specification*
f-number	*Depending on Thermal Core used; see Thermal Core specification*
Image frequency	30 Hz
Focus	Fixed

Detector data	
Focal plane array/spectral range	Uncooled microbolometer/7.5–14 µm
Detector pitch	*Depending on Thermal Core used; see Thermal Core specification*

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Measurement	
Camera temperature range	*Depending on Thermal Core used; see Thermal Core specification*
Object temperature range and accuracy (for ambient temperature 15–35°C (59–95°F))	*Depending on Thermal Core used; see Thermal Core specification*

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
Automatic hot/cold detection	Max./min. temperature value and position shown within Box
Schedule response	sftp (image), SMTP (image and/or measurement data/result)
Measurement presets	Yes
Atmospheric transmission correction	Based on inputs of distance, atmospheric temperature, and relative humidity
Lens transmission correction	Automatic, based on signals from internal sensors
Emissivity correction	Variable from 0.01 to 1.0
Reflected apparent temperature correction	Based on input of reflected temperature
External optics/windows correction	Based on input of optics/window transmission and temperature
Measurement corrections	• Global object parameters • Local parameters per analyze function
Measurement frequency	Up to 10 Hz
Measurement result read-out	• Ethernet/IP (pull) • Modbus TCP Server (pull) • MQTT (push) • Query over REST API (pull) Measurements and still image (radiometric JPEG, visual 640 × 480, visual 1280 × 960), read access only. • Web interface

Alarm	
Alarm functions	• On any selected measurement function • Digital in • Internal camera temperature
Alarm output	• Digital out • E-mail (SMTP) (push) • EtherNet/IP (pull) • File transfer (FTP) (push) • Modbus TCP Server (pull) • MQTT (push) • Query over RESTful API (pull) • Store image or video

Configuration of camera	
Web interface	Yes

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Recording of still images/video	
Image storage	• Format: FLIR radiometric JPEG • Number of images: 100 • Storage as function of: ◦ Alarm ◦ Scheduling ◦ User interaction (camera web)
Video storage	• Format: H.264 • Number of videos: 10 • Storage as function of alarm; 5 sec. before alarm and 5 sec. after alarm.

Video/Radiometric streaming RTSP	
Protocol	RTSP
Unicast	Yes
Multicast	Yes
Multiple image streams	Yes
Video streaming	
Image quality	Bit rate set through Camera web
Video streaming, Image source 0:	
Resolution (source 0)	640 × 480 pixels
Contrast enhancement	FSX / Histogram equalization (IR only)
Overlay (source 0)	With / Without
Image source (source 0)	Visual / IR / MSX
Pixel format (source 0)	YUV411
Encoding (source 0)	H.264 / MPEG4 / MJPEG
Video streaming, Image source 1:	
Resolution (source 1)	1280 × 960 pixels
Overlay (source 1)	No
Image source (source 1)	Visual
Pixel format (source 1)	YUV411
Encoding (source 1)	H.264 / MPEG4 / MJPEG
Radiometric streaming	
Resolution (radiometric)	N/A
Source	N/A
Pixel format (radiometric)	N/A
Encoding (radiometric)	N/A

Ethernet	
Interface	• Wired • Wi-Fi (option)
Connector type	• M12 8-pin X-coded, Female • RP-SMA, Female
Ethernet, purpose	Control, result, image, and power
Ethernet, type	1000 Mbps
Ethernet, standard	IEEE 802.3
Ethernet, communication	TCP/IP socket-based FLIR proprietary

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Ethernet	
Ethernet, power	Power over Ethernet, PoE IEEE 802.3af class 3
Ethernet, protocols	• EtherNet/IP • IEEE 1588 • Modbus TCP Server • MQTT • SNMP • TCP, UDP, SNTP, RTSP, RTP, HTTP, HTTPS, ICMP, IGMP, sftp (server), FTP (client), SMTP, DHCP, MDNS (Bonjour), uPnP

Digital Input/output	
Connector type	M12 12-pin A-coded, Male (shared with external power)
Digital input	2x opto-isolated Vin(low)= 0–1.5 V, Vin(high)= 3–25 V
Digital input, purpose	• Alarm
Digital output	• 3x opto-isolated, 0–30 V DC, max. 300 mA (derated to 200 mA at 60C) • Solid state opto relay • 1x dedicated as Fault output (NC)
Digital output, purpose	• As function of alarm, output to external device • Fault (NC)
Digital I/O, isolation voltage	500 VRMS

RS-232/485 serial interface	
Connector type	M8 A-coded, Male
Prerequisite for use	*See Advanced Smart Sensor configuration*
Serial communication, purpose	*See Advanced Smart Sensor configuration*
Serial communication, standard	*See Advanced Smart Sensor configuration*
Serial communication, HW interface	*See Advanced Smart Sensor configuration*
Scanlist support	*See Advanced Smart Sensor configuration*

Wi-Fi	
Connector type	RP-SMA, Female
Standard	*See Wi-Fi option*
Antenna	*See Wi-Fi option*
Connection type	*See Wi-Fi option*

Warranty and service	
Warranty	http://www.flir.com/warranty/