



Smart Sensor configuration (FLIR A400/A500/A700)

P/N: T300312

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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.



General

When a camera is ordered the following must be selected, as a minimum:

- one of the camera bodies:
 - FLIR A400 Thermal Core
 - FLIR A500 Thermal Core
 - FLIR A700 Thermal Core
- one of the configurations:
 - Smart Sensor configuration
 - Image Streaming configuration
- one (or several) of the lenses:
 - IR lens, f=70 mm (6°) with case
 - IR lens, f=29 mm (14°)
 - IR lens, f=17 mm (24°)
 - IR lens, f=10 mm (42°)
 - IR lens Dual FOV, f=17/29 mm (24°/14°)

For orders of more than one lens, select the primary lens to be mounted on the Thermal Core camera body at delivery. The additional lenses are then delivered in separate boxes. Due to its size, the IR lens, f=70 (6°), is always delivered in a case.

Please note that other P/Ns are used when the lenses are ordered as accessories.

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
- Option, Macro mode 50/71/101 µm for 24°

Note the following:

- The *Advanced Smart Sensor configuration* requires the *Smart Sensor configuration*.
- The *Smart Sensor configuration* is not compatible with FLIR Research Studio. The *Advanced Smart Sensor configuration* is required.

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 lens used; see lens specification
Minimum focus distance	Depending on lens used; see lens specification
Focal length	Depending on lens used; see lens specification
Spatial resolution (IFOV)	Depending on lens used; see lens specification
Lens identification	Automatic
f-number	Depending on lens used; see lens specification



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Imaging and optical data	
Image frequency	30 Hz
Focus	• One-shot contrast • Motorized • Manual
Detector data	
Focal plane array/spectral range	Uncooled microbolometer/7.5–14 μm
Detector pitch	<i>Depending on Thermal Core used; see Thermal Core specification</i>
Measurement	
Camera temperature range	<i>Depending on Thermal Core used; see Thermal Core specification</i>
Object temperature range and accuracy (for ambient temperature 15–35°C (59–95°F))	<i>Depending on Thermal Core used; see Thermal Core specification</i>
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



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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
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



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Video/Radiometric streaming RTSP	
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
Ethernet, power	Power over Ethernet, PoE IEEE 802.3af class 3
Ethernet, protocols	- EtherNet/IP - IEEE 1588 - Modbus TCP Server - MQTT - SNMP - TCP, UDP, SNMP, 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



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Warranty and service	
Warranty	