FLIR A500–EST 42°

P/N: 90602-0101

Copyright

Document identity

Website

http://www.flir.com

Customer support

http://support.flir.com

Disclaimer

General
The FLIR A500-EST camera is a 464 x 348 resolution thermal camera with functionality and connectivity aimed towards screening of individuals with elevated skin temperature. It also has built in EST functionality for basic EST applications.
The camera is easily configured from the built in web interface. Once it is setup, it can be connected to 3rd party Video Management Systems or other 3rd party systems using the RESTful API amongst other protocols.

Imaging and optical data	
Infrared resolution	464 x 348 pixels
Thermal sensitivity (NETD)	<30 mK, 42° @ +30°C (+86°F)
Field of view (FOV)	42° × 32°
Minimum focus distance	0.15 m (0.49 ft)
Focal length	10 mm (0.39 in)
Spatial resolution (IFOV)	1.66 mrad/pixel
Lens identification	Automatic
f-number	1.1
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	17 µm

Measurement	
Camera temperature range	15 to 45°C (59 to 113°F)
	Accuracy ±0.3°C (±0.5°F) when used in Screening mode
	The camera will provide contrast from -20 to 120 °C (–4 to 248°F), but no temperature information will be provided

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Screening mode	
Sampling average mode	Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature Accuracy (drift): ±0.3°C (±0.5°F)[1]

Measurement analysis	
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 • External Black-body correction
Measurement frequency	Up to 10 Hz
Measurement result read-out	• Ethernet/IP (pull) • Modbus TCP Client (push) • 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 Client (push) • Modbus TCP Server (pull) • MQTT (push) • ONVIF events (push) • Query over RESTful API (pull) • Store image or video

Configuration of camera	
Web interface	Yes

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1. No external blackbody needed.

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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)	464 x 348 pixels
Source	IR
Pixel format (radiometric)	MONO 16
Encoding (radiometric)	• Compressed JPEG-LS • FLIR Radiometric

Ethernet	
Interface	• Wired • Wi-Fi
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 Client • Modbus TCP Server • MQTT • ONVIF-S • 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	• NUC • NUC disable • Alarm • Update screening reference sample
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, for example when the screening alarm is triggered. • Fault (NC)
Digital I/O, isolation voltage	500 VRMS

Power system	
Connector type	M12 12-pin A-coded, Male (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
External power operation	24/48 V DC 8 W max
External voltage	Allowed range 18–56 V DC

RS-232/485 serial interface	
Connector type	M8 A-coded, Male
Prerequisite for use	ONVIF must be initiated.
Serial communication, purpose	Pan & Tilt control
Serial communication, standard	Pelco D
Serial communication, HW interface	RS232 and RS485 exclusively
Scanlist support	Yes

Wi-Fi	
Connector type	RP-SMA, Female
Standard	IEEE802.11a/b/g/n
Antenna	Dipole antenna 2.4/5 GHz (gain: maximum 2 dBi)
Connection type	Peer to peer (ad hoc) or infrastructure (network)

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Environmental data	
Operating temperature range	–20 to 50°C (–4 to 122°F)
	Cooling plate is needed in temperatures above 40°C (104°F).
	Maximum camera case temperature: 65°C (149°F)
Storage temperature range	IEC 68-2-1 and IEC 68-2-2, –40 to 70°C (–40 to 158°F) for 16 hours
Humidity (operating and storage)	IEC 60068-2-30/24 hours, 95% relative humidity, 25–40°C (77–104°F)/2 cycles
EMC	• ETSI EN 301 489-1 (radio) • ETSI EN 301 489-17 (radio) • EN 61000-4-8 (magnetic field) • FCC 47 CFR Part 15 Class B (emission US) • ISO 13766-1 (EMC - Earth-moving and building construction machinery) • EN ISO 14982 (EMC - Agricultural and forestry machinery)
Radio spectrum	• FCC 47 CFR Part 15 Class C (2.4 GHz band US) • FCC 47 CFR Part 15 Class E (5 GHz band US) • RSS-247 (2.4 GHz and 5 GHz band Canada) • ETSI EN 300 328 V2.1.1 (2.4 GHz band EU) • ETSI EN 301 893 V2.1.1 (5 GHz band EU)
Encapsulation	IEC 60529, IP 54, IP66 with accessory
Shock	IEC 60068-2-27, 25 g
Vibration	• IEC 60068-2-6, 0.15 mm at 10–58 Hz and 2 g at 58–500 Hz, sinusoidal • IEC 61373 Cat 1 (Railway)
Safety	IEC 62368-1 (IT equipment audio-visual products)
Corrosion	• ISO 12944 C4 G or H • EN60068-2-11

Physical data	
Weight	0.82 kg (1.8 lb)
Size (L × W × H)	139 × 77 × 77 mm (5.47 × 3.03 × 3.03 in)
Base mount	4× M4 on 4 sides
Tripod mounting	UNC ¼″-20 on 2 sides
Housing material	Aluminium
Color	Black

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

Shipping information	
Packaging, type	Cardboard box
Packaging, contents	• Infrared camera • Lens • Ethernet cable M12 to RJ45F (0.3 m), P/N T911869ACC • Wi-Fi option including antenna • Printed documentation including the username and password for log in to the web interface of the camera

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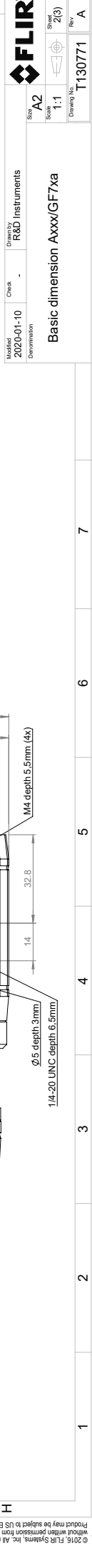| Shipping information	
Packaging, weight	1.14 kg (2.51 lb)
Packaging, size	207 × 142 × 129 mm (8.15 × 5.59 × 5.08 in)
EAN-13	7332558027035
UPC-12	845188023102
Country of origin	Sweden

Supplies & accessories:

- T300241; IR lens, f=29 mm (14°)
- T300240; IR lens, f=17 mm (24°)
- T300239; IR lens, f=10 mm (42°)
- T951004ACC; Ethernet cable CAT6, 2 m/6.6 ft.
- T130665ACC; Cooling plate
- T300075ACC; IP hood for lens
- T300163; Hard case for FLIR A400/A500/A700 series
- T300202; Connector cap kit
- T300216; Axxx Accessory kit
- T300218; Two-ball mounting bracket kit
- T300268ACC; A-series connection board
- T911850ACC; Antenna for WLAN 2.4/5 GHz
- T911852ACC; Cable M12 to pigtail, 2 m
- T911853ACC; Cable M12 to pigtail, 10 m
- T911854ACC; Ethernet cable M12 to RJ45, 2 m
- T911855ACC; Ethernet cable M12 to RJ45, 10 m
- T911869ACC; Ethernet cable M12 to RJ45F, 0.3 m
- T911183; Gigabit PoE injector 16 W, with multi-plugs
- T131177; Roll-up, Backdrop for screening
- T131178; Floor sticker, Direction arrow (5 pcs)
- T131179; Floor sticker, Queue markers (5 pcs)
- T131180; Floor sticker, Flexible position for screening
- T131181; Floor sticker, Position for screening
- T300366; Roll-up and stickers kit for screening
- T911997; Tripod
- T199507; Gigabit PoE injector 15 W
- T300342; FLIR Screen-EST, Perpetual license

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Incl. STD Lenses & Macro
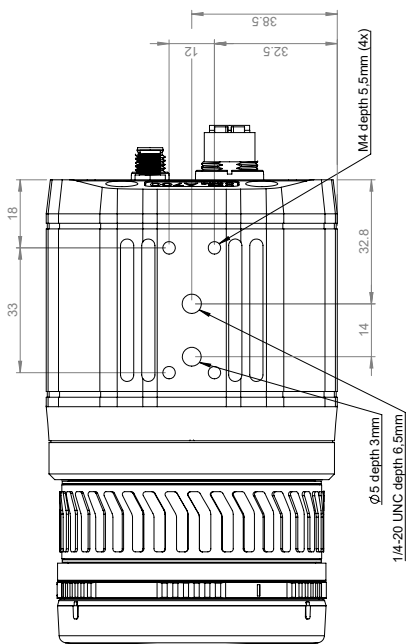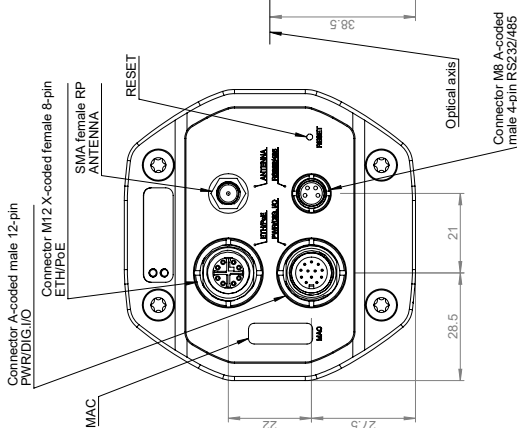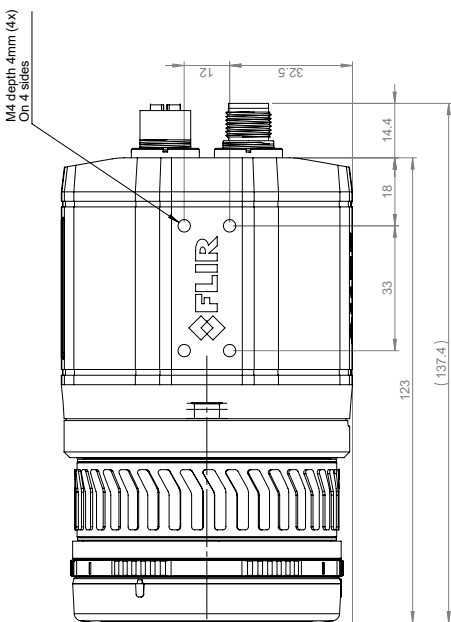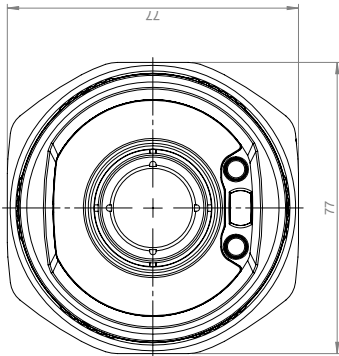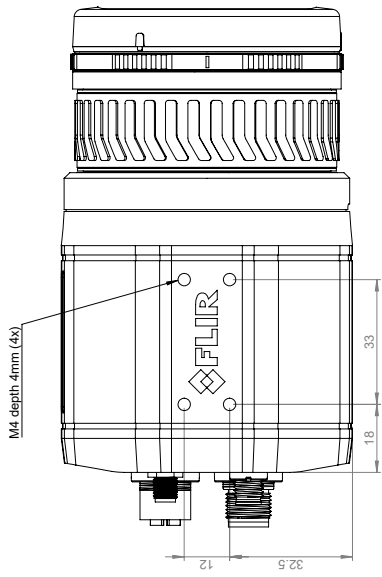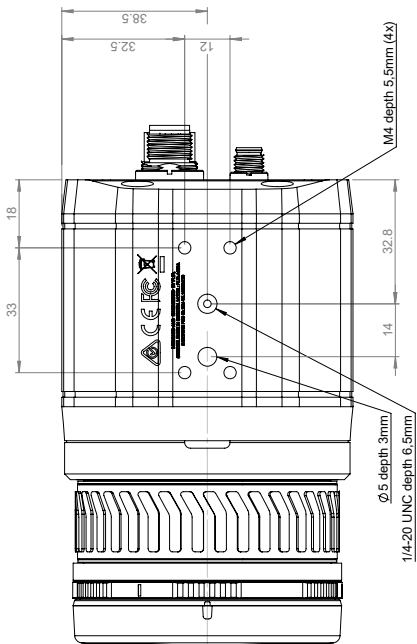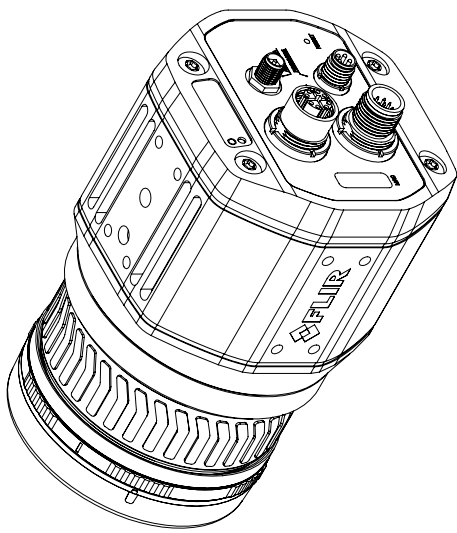
Basic dimensions for cameras with focal length:
f= 10mm
f= 17mm
f= 29mm

Macro WD=18mm

M4 depth 4mm (4x)

33
18
12
32.5

77
77

38.5
32.5
12

M4 depth 5.5mm (4x)
18
33
32.8
14

Ø5 depth 3mm
1/4-20 UNC depth 6.5mm

M4 depth 4mm (4x)
On 4 sides
12
32.5
14.4
18
33
123
(137.4)
38.5

38.5
32.5
12

M4 depth 5.5mm (4x)
18
33
32.8
14

Ø5 depth 3mm
1/4-20 UNC depth 6.5mm

Optical axis

Optical axis

Connector A-coded male 12-pin
PWR/DIG.I/O

Connector M12 X-coded female 8-pin
ETH/PoE

SMA female RP
ANTENNA

RESET

Connector M8 A-coded
male 4-pin RS232/485

MAC

21
28.5
22
27.5

July 07, 2021   Täby, Sweden   AQ320379

CE Declaration of Conformity – EU Declaration of Conformity

Product: FLIR A4XX-, A5XX, A7XX-series and GF7Xa
Name and address of the manufacturer:
FLIR Systems AB
PO Box 7376
SE-187 15 Täby, Sweden

This declaration of conformity is issued under the sole responsibility of the manufacturer.
The object of the declaration: FLIR A4XX-, A5XX, A7XX-series and GF7Xa (Product Model Name FLIR-A8590).
The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

Directives:

Directive	2012/19/EU	Waste electrical and electric equipment
Directive	2011/65/EU	RoHS and 2015/830/EU (Phtalates)
Directive	2014/53/EU	Radio Equipment Directive (RED)

Standards:

Emission:	EN 55032:2015	Electromagnetic compability multimedia
Immunity:	EN 55035:2017	Electromagnetic Compability Multimedia
	ETSI EN 301489-1 v2.2.1	ERM – EMC for radio equipment
	ETSI EN 301489-17 v3.2.0	ERM – EMC Wideband data
Radio:	ETSI EN 300 328 v2.2.2	Harmonized EN covering essential requirements of the R&TTE Directive
	ETSI EN 301 893 v.2.1.1	5GHz WLAN
Safety:	IEC 62368-1:2014 (2nd Edition) + Cor.1:2015 + Cor.2: 2015 and EN62368-1:2014 + AC: 2015 + A11: 2017 + AC: 2017 Video, information and communication tech	
RoHS	EN 50581:2012	Technical documentation

FLIR Systems AB
Quality Assurance

Lea Dabiri
Quality Manager