Metadata

Part No.	86000-0000	85900-0000
Product name	FLIR A400 Thermal Core	FLIR A700 Thermal Core
Revision	65946	65945
Last modified	2020-05-05	2020-05-05

General

When a camera is ordered the following must be selected, as a minimum:
- one of the camera bodies:
- FLIR A400 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°)

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. 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°

The Advanced Smart Sensor configuration and the Advanced Image Streaming configuration require the Smart Sensor configuration and the Image Streaming configuration, respectively.

Imaging and optical data

Infrared resolution	320 × 240 pixels	640× 480 pixels
Thermal sensitivity (NETD)	• <30 mK, 42° @ +30°C (+86°F) • <40 mK, 24° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)	• <30 mK, 42° @ +30°C (+86°F) • <40 mK, 24° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)
Field of view (FOV)	Depending on lens used; see lens specification	Depending on lens used; see lens specification
Minimum focus distance	Depending on lens used; see lens specification	Depending on lens used; see lens specification
Focal length	Depending on lens used; see lens specification	Depending on lens used; see lens specification
Spatial resolution (IFOV)	Depending on lens used; see lens specification	Depending on lens used; see lens specification
Lens identification	Automatic	Automatic
f-number	Depending on lens used; see lens specification	Depending on lens used; see lens specification
Image frequency	30 Hz	30 Hz
Focus	• One-shot contrast	• One-shot contrast

	• Motorized • Manual	• Motorized • Manual

Detector data

Focal plane array/spectral range	Uncooled microbolometer/7.5–14 µm	Uncooled microbolometer/7.5–14 µm
Detector pitch	24 µm	12 µm

Measurement

Camera temperature range	• −20 to 120°C (−4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 2000°C (572 to 3632°F)	• −20 to 120°C (−4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 2000°C (572 to 3632°F)

Object temperature range and accuracy (for ambient temperature 15–35°C (59–95°F))	• Range −20 to 120°C (−4 to 248°F):
	  ◦ −20 to 100°C (−4 to 212°F),accuracy ±2°C (±3.6°F)
	  ◦ 100 to 120°C (212 to 248°F),accuracy ±2%
	• Range 0 to 650°C (32 to 1202°F):
	  ◦ 0 to 100°C (32 to 212°F),accuracy ±2°C (±3.6°F)
	  ◦ 100 to 650°C (212 to 1202°F),accuracy ±2%
	• Range 300 to 2000°C (572 to 3632°F):
	  ◦ accuracy ±2%
		• Range −20 to 120°C (−4 to 248°F):
		  ◦ −20 to 100°C (−4 to 212°F),accuracy ±2°C (±3.6°F)
		  ◦ 100 to 120°C (212 to 248°F),accuracy ±2%
		• Range 0 to 650°C (32 to 1202°F):
		  ◦ 0 to 100°C (32 to 212°F),accuracy ±2°C (±3.6°F)
		  ◦ 100 to 650°C (212 to 1202°F),accuracy ±2%
		• Range 300 to 2000°C (572 to 3632°F):
		  ◦ accuracy ±2%

Ethernet

Interface	• Wired • Wi-Fi (option)	• Wired • Wi-Fi (option)
Connector type	• M12 8-pin X-coded, Female • RP-SMA, Female	• M12 8-pin X-coded, Female • RP-SMA, Female
Ethernet, purpose	Control, result, image, and power	Control, result, image, and power
Ethernet, type	1000 Mbps	1000 Mbps
Ethernet, standard	IEEE 802.3	IEEE 802.3
Ethernet, communication	See Smart Sensor and Image Streaming configurations	See Smart Sensor and Image Streaming configurations
Ethernet, power	Power over Ethernet, PoE IEEE 802.3af class 3	Power over Ethernet, PoE IEEE 802.3af class 3
Ethernet, protocols	See Smart Sensor and Image Streaming configurations	See Smart Sensor and Image Streaming configurations

Digital Input/ output

Connector type	M12 12-pin A-coded, Male (shared with external power)	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	2x opto-isolated Vin(low)= 0–1.5 V, Vin(high)= 3–25 V
Digital input, purpose	See Smart Sensor and Image Streaming configurations	See Smart Sensor and Image Streaming configurations
Digital output	• 3x opto-isolated, 0–48 V DC, max. 350 mA	• 3x opto-isolated, 0–48 V DC, max. 350 mA

	(derated to 200 mA at 60C) • Solid state opto relay • 1x dedicated as Fault output (NC)	(derated to 200 mA at 60C) • Solid state opto relay • 1x dedicated as Fault output (NC)
Digital output, purpose	See Smart Sensor and Image Streaming configurations	See Smart Sensor and Image Streaming configurations
Digital I/O, isolation voltage	500 VRMS	500 VRMS

Power system

Connector type	M12 12-pin A-coded, Male (shared with Digital I/O)	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	• 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	24/48 V DC 8 W max
External voltage	Allowed range 18–56 V DC	Allowed range 18–56 V DC

RS-232/485 serial interface

Connector type	M8 A-coded, Male	M8 A-coded, Male
Prerequisite for use	See Advanced Smart Sensor and Advanced Image Streaming configurations	See Advanced Smart Sensor and Advanced Image Streaming configurations
Serial communication, purpose	See Advanced Smart Sensor and Advanced Image Streaming configurations	See Advanced Smart Sensor and Advanced Image Streaming configurations
Serial communication, standard	See Advanced Smart Sensor and Advanced Image Streaming configurations	See Advanced Smart Sensor and Advanced Image Streaming configurations
Serial communication, HW interface	See Advanced Smart Sensor and Advanced Image Streaming configurations	See Advanced Smart Sensor and Advanced Image Streaming configurations
Scanlist support	See Advanced Smart Sensor and Advanced Image Streaming configurations	See Advanced Smart Sensor and Advanced Image Streaming configurations

Wi-Fi (Option)

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

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)	−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	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	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)	• 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)	• 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)	• 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	IEC 60529, IP 54, IP66 with accessory
Shock	IEC 60068-2-27, 25 g	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)	• 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)	IEC 62368-1 (IT equipment audio-visual products)
Corrosion	• ISO 12944 C4 G or H • EN60068-2-11	• ISO 12944 C4 G or H • EN60068-2-11

Physical data

Weight (including 24° lens)	0.82 kg (1.8 lb)	0.82 kg (1.8 lb)
Size (L × W × H)	123 × 77 × 77 mm (4.84 × 3.03 × 3.03 in)	123 × 77 × 77 mm (4.84 × 3.03 × 3.03 in)
Base mount	4× M4 on 4 sides	4× M4 on 4 sides
Tripod mounting	UNC ¼"-20 on 2 sides	UNC ¼"-20 on 2 sides
Housing material	Aluminium	Aluminium
Color	Black	Black

Warranty and service

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

Shipping information

Packaging, type	Cardboard box	Cardboard box
Packaging, contents	• Infrared camera (without lens) • Ethernet cable M12 to RJ45F (0.3 m), P/N T911869ACC • Printed documentation including the username and password for log in to the web interface of the camera	• Infrared camera (without lens) • Ethernet cable M12 to RJ45F (0.3 m), P/N T911869ACC • Printed documentation including the username and password for log in to the web interface of the camera
Packaging, weight	1.14 kg (2.51 lb)	1.14 kg (2.51 lb)
Packaging, size	207 × 142 × 129 mm (8.15 × 5.59 × 5.08 in)	207 × 142 × 129 mm (8.15 × 5.59 × 5.08 in)
EAN-13	7332558026618	7332558026540
UPC-12	845188022518	845188022440
Country of origin	Sweden	Sweden