

## P/N: 86000-0000

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### 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](mailto:exportquestions@flir.com) with any questions.



### General

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

1. one of the camera bodies:
  - FLIR A400 Thermal Core
  - FLIR A700 Thermal Core
2. one of the configurations:
  - Smart Sensor configuration
  - Image Streaming configuration
3. 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  $\mu\text{m}$  for 24°



### NOTE

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
Thermal sensitivity (NETD)	<ul style="list-style-type: none"> <li>• &lt;30 mK, 42° @ +30°C (+86°F)</li> <li>• &lt;40 mK, 24° @ +30°C (+86°F)</li> <li>• &lt;50 mK, 14° @ +30°C (+86°F)</li> </ul>
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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<b>Imaging and optical data</b>	
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> <li>• One-shot contrast</li> <li>• Motorized</li> <li>• Manual</li> </ul>
<b>Detector data</b>	
Focal plane array/spectral range	Uncooled microbolometer/7.5–14 $\mu\text{m}$
Detector pitch	24 $\mu\text{m}$
<b>Measurement</b>	
Camera temperature range	<ul style="list-style-type: none"> <li>• –20 to 120°C (–4 to 248°F)</li> <li>• 0 to 650°C (32 to 1202°F)</li> <li>• 300 to 2000°C (572 to 3632°F)</li> </ul>
Object temperature range and accuracy (for ambient temperature 15–35°C (59–95°F))	<ul style="list-style-type: none"> <li>• Range –20 to 120°C (–4 to 248°F):               <ul style="list-style-type: none"> <li>◦ –20 to 100°C (–4 to 212°F), accuracy <math>\pm 2^\circ\text{C}</math> (<math>\pm 3.6^\circ\text{F}</math>)</li> <li>◦ 100 to 120°C (212 to 248°F), accuracy <math>\pm 2\%</math></li> </ul> </li> <li>• Range 0 to 650°C (32 to 1202°F):               <ul style="list-style-type: none"> <li>◦ 0 to 100°C (32 to 212°F), accuracy <math>\pm 2^\circ\text{C}</math> (<math>\pm 3.6^\circ\text{F}</math>)</li> <li>◦ 100 to 650°C (212 to 1202°F), accuracy <math>\pm 2\%</math></li> </ul> </li> <li>• Range 300 to 2000°C (572 to 3632°F):               <ul style="list-style-type: none"> <li>◦ accuracy <math>\pm 2\%</math></li> </ul> </li> </ul>
<b>Ethernet</b>	
Interface	<ul style="list-style-type: none"> <li>• Wired</li> <li>• Wi-Fi (option)</li> </ul>
Connector type	<ul style="list-style-type: none"> <li>• M12 8-pin X-coded, Female</li> <li>• RP-SMA, Female</li> </ul>
Ethernet, purpose	Control, result, image, and power
Ethernet, type	1000 Mbps
Ethernet, standard	IEEE 802.3
Ethernet, communication	<i>See Smart Sensor and Image Streaming configurations</i>
Ethernet, power	Power over Ethernet, PoE IEEE 802.3af class 3
Ethernet, protocols	<i>See Smart Sensor and Image Streaming configurations</i>
<b>Digital Input/ output</b>	
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	<i>See Smart Sensor and Image Streaming configurations</i>
Digital output	<ul style="list-style-type: none"> <li>• 3x opto-isolated, 0–48 V DC, max. 350 mA (derated to 200 mA at 60C)</li> <li>• Solid state opto relay</li> <li>• 1x dedicated as Fault output (NC)</li> </ul>



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<b>Digital Input/ output</b>	
Digital output, purpose	<i>See Smart Sensor and Image Streaming configurations</i>
Digital I/O, isolation voltage	500 VRMS
<b>Power system</b>	
Connector type	M12 12-pin A-coded, Male (shared with Digital I/O)
Power consumption	<ul style="list-style-type: none"> <li>7.5 W at 24 V DC typical</li> <li>7.8 W at 48 V DC typical</li> <li>8.1 W at 48 V PoE typical</li> </ul>
External power operation	24/48 V DC 8 W max
External voltage	Allowed range 18–56 V DC
<b>RS-232/485 serial interface</b>	
Connector type	M8 A-coded, Male
Prerequisite for use	<i>See Advanced Smart Sensor and Advanced Image Streaming configurations</i>
Serial communication, purpose	<i>See Advanced Smart Sensor and Advanced Image Streaming configurations</i>
Serial communication, standard	<i>See Advanced Smart Sensor and Advanced Image Streaming configurations</i>
Serial communication, HW interface	<i>See Advanced Smart Sensor and Advanced Image Streaming configurations</i>
Scanlist support	<i>See Advanced Smart Sensor and Advanced Image Streaming configurations</i>
<b>Wi-Fi (Option)</b>	
Connector type	RP-SMA, Female
Standard	<i>See Wi-Fi option</i>
Antenna	<i>See Wi-Fi option</i>
Connection type	<i>See Wi-Fi option</i>
<b>Environmental data</b>	
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	<ul style="list-style-type: none"> <li>ETSI EN 301 489-1 (radio)</li> <li>ETSI EN 301 489-17 (radio)</li> <li>EN 61000-4-8 (magnetic field)</li> <li>FCC 47 CFR Part 15 Class B (emission US)</li> <li>ISO 13766-1 (EMC - Earth-moving and building construction machinery)</li> <li>EN ISO 14982 (EMC - Agricultural and forestry machinery)</li> </ul>

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Environmental data	
Radio spectrum	<ul style="list-style-type: none"> <li>FCC 47 CFR Part 15 Class C (2.4 GHz band US)</li> <li>FCC 47 CFR Part 15 Class E (5 GHz band US)</li> <li>RSS-247 (2.4 GHz and 5 GHz band Canada)</li> <li>ETSI EN 300 328 V2.1.1 (2.4 GHz band EU)</li> <li>ETSI EN 301 893 V2.1.1 (5 GHz band EU)</li> </ul>
Encapsulation	IEC 60529, IP 54, IP66 with accessory
Shock	IEC 60068-2-27, 25 g
Vibration	<ul style="list-style-type: none"> <li>IEC 60068-2-6, 0.15 mm at 10–58 Hz and 2 g at 58–500 Hz, sinusoidal</li> <li>IEC 61373 Cat 1 (Railway)</li> </ul>
Safety	IEC 62368-1 (IT equipment audio-visual products)
Corrosion	<ul style="list-style-type: none"> <li>ISO 12944 C4 G or H</li> <li>EN60068-2-11</li> </ul>
Physical data	
Weight (including 24° lens)	0.82 kg (1.8 lb)
Size (L × W × H)	123 × 77 × 77 mm (4.84 × 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	<a href="http://www.flir.com/warranty/">http://www.flir.com/warranty/</a>
Shipping information	
Packaging, type	Cardboard box
Packaging, contents	<ul style="list-style-type: none"> <li>Infrared camera (without lens)</li> <li>Ethernet cable M12 to RJ45F (0.3 m), P/N T911869ACC</li> <li>Printed documentation including the username and password for log in to the web interface of the camera</li> </ul>
Packaging, weight	1.14 kg (2.51 lb)
Packaging, size	207 × 142 × 129 mm (8.15 × 5.59 × 5.08 in)
EAN-13	7332558026618
UPC-12	845188022518
Country of origin	Sweden

### Supplies & accessories:

- T300216; Axxx Accessory kit
- T911850ACC; Antenna for WLAN 2.4/5 GHz
- T300268ACC; A-series connection board
- T911853ACC; Cable M12 to pigtail, 10 m
- T911852ACC; Cable M12 to pigtail, 2 m
- T300202; Connector cap kit
- T130665ACC; Cooling plate
- T911855ACC; Ethernet cable M12 to RJ45, 10 m
- T911854ACC; Ethernet cable M12 to RJ45, 2 m
- T911869ACC; Ethernet cable M12 to RJ45F, 0.3 m
- T300163; Hard case for FLIR A400/A700 series



## FLIR A400 Thermal Core

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**P/N: 86000-0000**

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- T300075ACC; IP hood for lens
- T300215; Science kit
- T300218; Two-ball mounting bracket kit
- T951004ACC; Ethernet cable CAT6, 2 m/6.6 ft.
- T911183; Gigabit PoE injector 16 W, with multi-plugs
- T199609; Option, Macro mode 50/71/101  $\mu\text{m}$  for 24°
- T199507; Gigabit PoE injector 15 W
- T300095; IR lens, f=70 mm (6°) with case
- T300241; IR lens, f=29 mm (14°)
- T300240; IR lens, f=17 mm (24°)
- T300239; IR lens, f=10 mm (42°)
- T300292; Advanced Image Streaming configuration
- T300293; Advanced Smart Sensor configuration
- T300295; Option, Visual camera including MSX
- T911850; Antenna WLAN 2.4/5 GHz + Wi-Fi
- 4220499; FLIR Research Studio - 1 Year Subscription (online activation)
- 4220500; FLIR Research Studio - Perpetual License (online activation)
- 4220646; FLIR Research Studio - Perpetual License (USB dongle)