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# FLIR A70 Thermal Core 51°

**P/N: 89951-0101**

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**Document identity**

Publ. No.: 89951-0101  
Commit: 80911  
Language:  
Modified: 2021-11-15  
Formatted: 2023-02-17

**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 thermal cores:	
<ul style="list-style-type: none"> <li>FLIR A50 Thermal Core</li> <li>FLIR A70 Thermal Core</li> </ul>	
2. one of the configurations:	
<ul style="list-style-type: none"> <li>Smart Sensor configuration (FLIR A50/A70)</li> <li>Image Streaming configuration (FLIR A50/A70)</li> </ul>	
The following options are available:	
<ul style="list-style-type: none"> <li>Antenna WLAN 2.4/5 GHz + Wi-Fi</li> <li>Option, Visual camera including MSX</li> <li>Advanced Smart Sensor configuration</li> <li>Advanced Image Streaming configuration</li> </ul>	
<b>Please note the following:</b>	
<ul style="list-style-type: none"> <li>The <i>Advanced Smart Sensor configuration</i> and the <i>Advanced Image Streaming configuration</i> require the <i>Smart Sensor configuration (FLIR A50/A70)</i> and the <i>Image Streaming configuration (FLIR A50/A70)</i>, respectively.</li> </ul>	

Imaging and optical data	
Infrared resolution	640 × 480 pixels
Thermal sensitivity (NETD)	35 mK
Field of view (FOV)	51° × 39°
Minimum focus distance	0.2 m (0.66 ft)
Focal length	8.2 mm (0.32 in)
Spatial resolution (IFOV)	1.5 mrad/pixel
f-number	1.4
Image frequency	30 Hz
Focus	Fixed

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

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<b>Measurement</b>	
Camera temperature range	<ul style="list-style-type: none"> <li>-20 to 175°C (-4 to 347°F)</li> <li>-20 to 250°C (-4 to 482°F)</li> <li>175 to 1000°C (347 to 1832°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 175°C (-4 to 347°F):               <ul style="list-style-type: none"> <li>-20 to 100°C (-4 to 212°F), accuracy ±2°C (±3.6°F)</li> <li>100 to 175°C (212 to 347°F), accuracy ±2%</li> </ul> </li> <li>Range -20 to 250°C (-4 to 482°F):               <ul style="list-style-type: none"> <li>-20 to 100°C (-4 to 212°F), accuracy ±2°C (±3.6°F)</li> <li>100 to 250°C (212 to 482°F), accuracy ±2%</li> </ul> </li> <li>Range 175 to 1000°C (347 to 1832°F): accuracy ±2%</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, 0–30 V DC, max. 300 mA (derated to 200 mA at 60C)</li> <li>Solid state opto relay</li> <li>1x dedicated as Fault output (NC)</li> </ul>
Digital output, purpose	<i>See Smart Sensor and Image Streaming configurations</i>
Digital I/O, isolation voltage	500 VRMS

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<b>Power system</b>	
External power	18 VDC – 56 VDC, Max 8 W
Power over Ethernet (PoE)	44 VDC – 56 VDC, Max 8.1 W
Connector type	External power: <ul style="list-style-type: none"> <li>M12 12-pin A-coded, Max 450 mA (shared with Digital I/O)</li> </ul> PoE: <ul style="list-style-type: none"> <li>M12 8-pin X-coded, Max 350 mA</li> </ul>
<b>Wi-Fi</b>	
Connector type	RP-SMA, Female
Standard	See <i>Wi-Fi option</i>
Antenna	See <i>Wi-Fi option</i>
Connection type	See <i>Wi-Fi option</i>
<b>Environmental data</b>	
Operating temperature range	<ul style="list-style-type: none"> <li>With cooling plates on at least three sides: –20 to 50°C (–4 to 122°F)</li> <li>No cooling plates: –20 to 35°C (–4 to 95°F)</li> </ul>
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 EN60068-2-38
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>
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, IP66
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>
Declaration of conformity	See: <a href="https://support.flir.com/resources/DoC">https://support.flir.com/resources/DoC</a>
<b>Physical data</b>	
Weight (including lens)	0.52 kg (1.1 lb)
Size (L x W x H)	107 x 67 x 57 mm (4.21 x 2.64 x 2.24 in)



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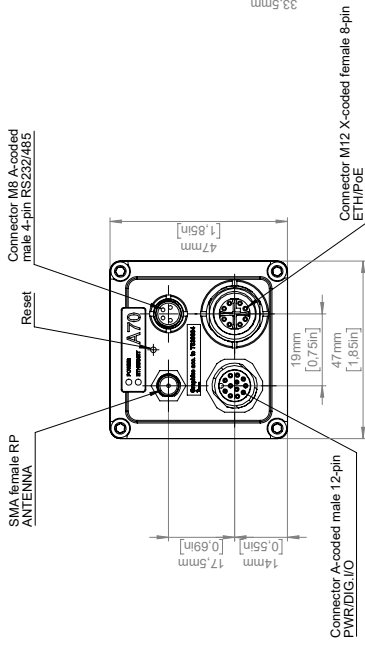
<b>Physical data</b>	
Base mount	4 × M2.5 directly onto camera or 4 × 10-32 UNF onto bottom cooling plate
Tripod mounting	UNC ¼"-20 on 2 sides
Housing material	Aluminium
Color	Black
<b>Warranty and service</b>	
Warranty	<a href="http://www.flir.com/warranty/">http://www.flir.com/warranty/</a>
<b>Shipping information</b>	
Packaging, type	Cardboard box
Packaging, contents	<ul style="list-style-type: none"> <li>Infrared camera</li> <li>Cooling plate</li> <li>Focus adjustment tool</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	0.92 kg (2.0 lb)
Packaging, size	182 × 128 × 109 mm (7.16 × 5.04 × 4.29 in)
EAN-13	7332558027936
UPC-12	845188024178
Country of origin	Sweden

### Supplies & accessories:

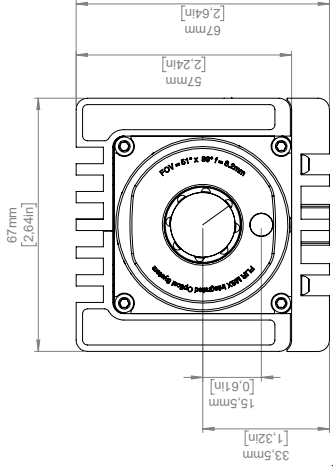
- T300292; Advanced Image Streaming configuration
- T300293; Advanced Smart Sensor configuration
- T951004ACC; Ethernet cable CAT6, 2 m/6.6 ft.
- T131367; FLIR Bridge
- T131369; FLIR Bridge Pro
- T300202; Connector cap kit
- T300268ACC; A-series connection board
- T300321ACC; Two-ball mounting bracket kit
- T911850; Antenna WLAN 2.4/5 GHz + Wi-Fi
- 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
- T911997; Tripod
- T300295; Option, Visual camera including MSX
- T300572; Option, Force password change at first-time use
- T199507; Gigabit PoE injector 15 W
- T199870; Extended Calibration Certificate for A7xx
- T199865; Standard Smart Sensor to Standard Image Streamer
- T199866; WiFi Option, excluding Antenna

# Generic dimensions for all FOV

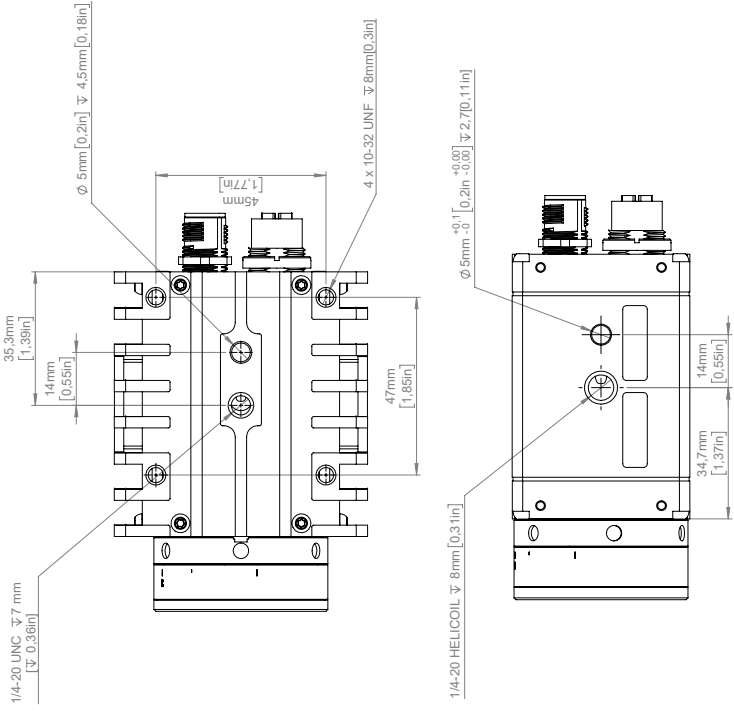
## Back View



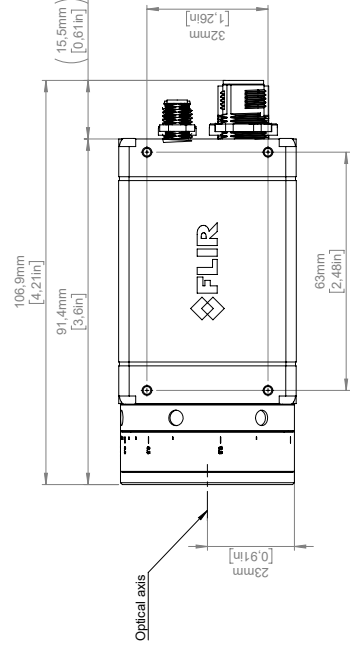
## Front View



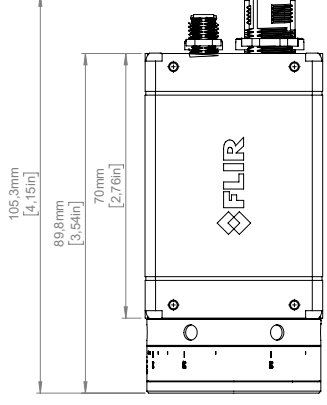
## Bottom View



## IR Lens 29 deg



## IR Lens 51 deg



## IR Lens 95 deg

