



Mess- und Prüftechnik Die Experten

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TELEDYNE  
FLIR

PREMIUM  
PARTNER

# FLIR A50 Thermal Core 51°

**P/N: 89851-0101**

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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:

- one of the thermal cores:
  - FLIR A50 Thermal Core
  - FLIR A70 Thermal Core
- one of the configurations:
  - Smart Sensor configuration (FLIR A50/A70)
  - Image Streaming configuration (FLIR A50/A70)

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

### Please note the following:

- The *Advanced Smart Sensor configuration* and the *Advanced Image Streaming configuration* require the *Smart Sensor configuration (FLIR A50/A70)* and the *Image Streaming configuration (FLIR A50/A70)*, respectively.

## Imaging and optical data

|                            |                  |
|----------------------------|------------------|
| Infrared resolution        | 464 × 348 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)  | 2.1 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                   | 17 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>175 to 1000°C (347 to 1832°F)</li> </ul>   |
| Object temperature range and accuracy<br>(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 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<br>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  |
| <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   | <i>See Wi-Fi option</i>   |

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|                                  |  |
|----------------------------------|--|
| <b>Wi-Fi</b>                     |  |
| 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<br>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)   |
| Base mount                       | 4 x M2.5 directly onto camera or 4 x 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>  |



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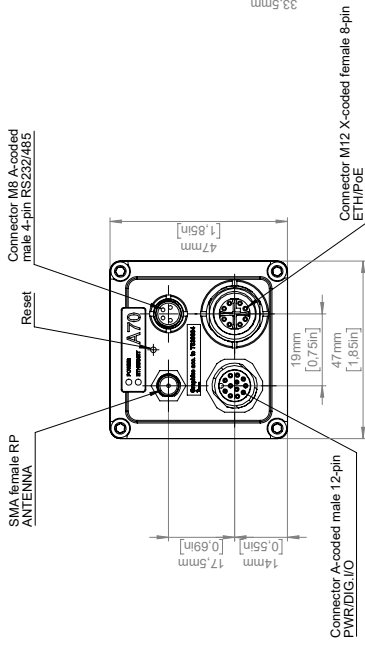
| Shipping information |   |
|----------------------|---|
| Packaging, type      | Cardboard box   |
| Packaging, contents  | <ul style="list-style-type: none"> <li>Infrared camera</li> <li>Cooling plate</li> <li>Focus adjustment tool</li> <li>Ethernet cable M12 to RJ45F (0.3 m), P/N T911869ACC</li> <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               | 7332558027912   |
| UPC-12               | 845188024154  |
| Country of origin    | Sweden  |

### Supplies & accessories:

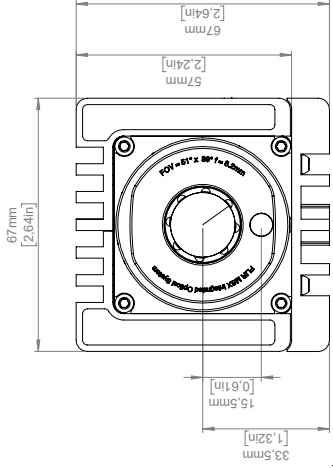
- T300292; Advanced Image Streaming configuration
- T300293; Advanced Smart Sensor configuration
- T951004ACC; Ethernet cable CAT6, 2 m/6.6 ft.
- T131367; FLIR Bridge
- T131369; FLIR Bridge Pro
- T300202; Connector cap kit
- T300268ACC; A-series connection board
- T300321ACC; Two-ball mounting bracket 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

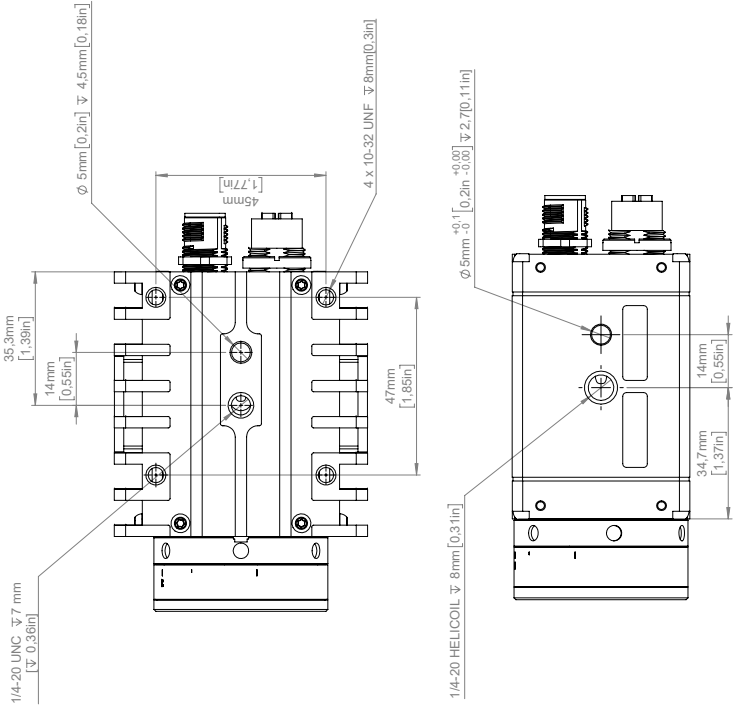
## Back View



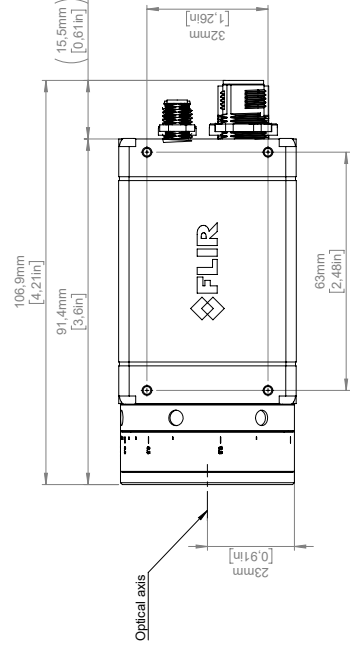
## Front View



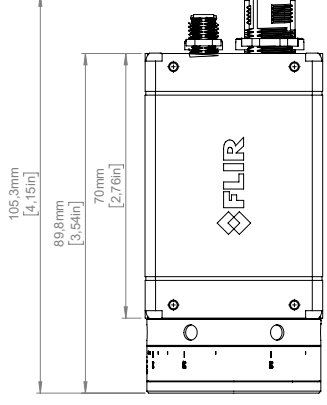
## Bottom View



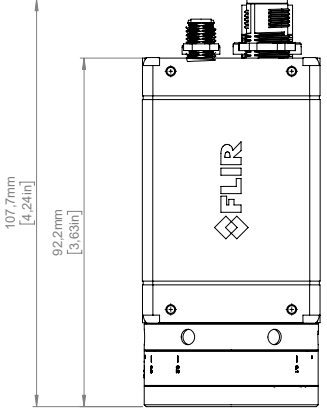
## IR Lens 29 deg



## IR Lens 51 deg



## IR Lens 95 deg



## Basic dimension Ax0

|              |            |       |      |          |      |
|--------------|------------|-------|------|----------|------|
| Modified     | 2021-04-15 | Check | JOHE | Drawn by | R&D  |
| Denomination |            |       |      |          |      |
| Size         | A2         | Scale | 1:1  | Sheet    | 1(1) |
| Drawing No.  | T131228    | Rev.  |      |          | A    |



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