

P/N: 75007-0101



**General description**

The FLIR A65 has features and functions that make it the natural choice for anyone who uses PC software to solve problems and for whom 640 × 512 pixel resolution is sufficient. Among its main features are GigE Vision and GenICam compliance, which makes it plug-and-play when used with software packages such as IMAQ Vision and Halcon.

Key features:

- Very affordable.
- Compact.
- GigE Vision and GenICam compliant.
- GigE Vision lockable connector.
- PoE (power over Ethernet).
- 8-bit 640 × 512 pixel images streamed at 30 Hz, signal linear
- 14-bit 640 × 512 pixel images streamed at 30 Hz, signal and temperature linear
- Synchronization between cameras possible.
- 1x+1x GPIO.
- Compliant with any software that supports GenICam, including National Instruments IMAQ Vision, Stemmers Common Vision Blox, and COGNEX Vision Pro.

Typical applications:

- Automation and thermal machine vision.
- Entry level "high-speed" R&D.

**Imaging and optical data**

IR resolution	640 × 512 pixels
Thermal sensitivity/NETD	< 0.05°C @ +30°C (+86°F) / 50 mK
Field of view (FOV)	90° × 69°
Focal length	7.5 mm (0.30 in.)
Spatial resolution (IFOV)	2.27 mrad
F-number	1.4
Image frequency	30 Hz
Focus	Fixed

**Detector data**

Detector type	Focal plane array (FPA), uncooled VOX microbolometer
Spectral range	7.5–13 μm

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<b>Detector data</b>	
Detector pitch	17 $\mu$ m
Detector time constant	Typical 12 ms
<b>Measurement</b>	
Object temperature range	<ul style="list-style-type: none"> <li>-25 to +135°C (-13 to 275°F)</li> <li>-40 to +550°C (-40 to +1022°F)</li> </ul>
Accuracy	$\pm$ 5°C ( $\pm$ 9°F) or $\pm$ 5% of reading
<b>Measurement analysis</b>	
Atmospheric transmission correction	Automatic, based on inputs for distance, atmospheric temperature and relative humidity
Optics transmission correction	Automatic, based on signals from internal sensors
Emissivity correction	Variable from 0.5 to 1.0
Reflected apparent temperature correction	Automatic, based on input of reflected temperature
External optics/windows correction	Automatic, based on input of optics/window transmission and temperature
Measurement corrections	Global object parameters
<b>Ethernet</b>	
Ethernet	Control and image
Ethernet, type	Gigabit Ethernet
Ethernet, standard	IEEE 802.3
Ethernet, connector type	RJ-45
Ethernet, communication	GigE Vision ver. 1.2 Client API GenICam compliant
Ethernet, image streaming	8-bit monochrome @ 30 Hz <ul style="list-style-type: none"> <li>Signal linear/ DDE</li> <li>Automatic/ Manual</li> <li>Flip H&amp;V</li> </ul> 14-bit 640 x 512 pixels @ 30 Hz <ul style="list-style-type: none"> <li>Signal linear/ DDE</li> <li>Temperature linear</li> </ul> GigE Vision and GenICam compatible
Ethernet, power	Power over Ethernet, PoE IEEE 802.3af class 0 Power
Ethernet, protocols	TCP, UDP, ICMP, IGMP, DHCP, GigEVision
<b>Digital input/output</b>	
Digital input, purpose	General purpose
Digital input	1x opto-isolated, "0" <1.2 VDC, "1" = 2-25 VDC.
Digital output, purpose	General purpose output to ext. device (programmatically set)
Digital output	1x opto-isolated, 2-40 VDC, max. 185 mA
Digital I/O, isolation voltage	500 VRMS

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<b>Digital input/output</b>	
Digital I/O, supply voltage	2–40 VDC, max. 200 mA
Digital I/O, connector type	12-pole M12 connector (shared with Digital synchronization and External power)
Synchronization in, purpose	Frame synchronization in to control camera
Synchronization in	1×, non-isolated
Synchronization in, type	LVC Buffer @ 3.3V, "0" <0.8 V, "1">2.0 V.
Synchronization out, purpose	Frame synchronization out to control another FLIR Ax5 camera
Synchronization out	1×, non-isolated
Synchronization out, type	LVC Buffer @ 3.3V, "0"=24 MA max, "1"= -24 mA max.
Digital synchronization, connector type	12-pole M12 connector (shared with Digital I/O and External power)
<b>Power system</b>	
External power operation	12/24 VDC, < 3.5 W nominal < 6.0 W absolute max.
External power, connector type	12-pole M12 connector (shared with Digital I/O and Digital Synchronization )
Voltage	Allowed range 10–30 VDC
<b>Environmental data</b>	
Operating temperature range	-15°C to +60°C (+5°F to +140°F)
	<div style="border: 1px solid black; padding: 5px;"> <p> <b>NOTE</b></p> <p>The operating temperature range assumes that the camera is mounted on the base support (included in the package) or a similar type of heatsink.</p> </div>
Storage temperature range	-40°C to +70°C (-40°F to +158°F)
Humidity (operating and storage)	IEC 60068-2-30/24 h 95% relative humidity +25° C to +40°C (+77°F to +104°F)
EMC	<ul style="list-style-type: none"> <li>• EN 61000-6-2 (Immunity)</li> <li>• EN 61000-6-3 (Emission)</li> <li>• FCC 47 CFR Part 15 Class B (Emission)</li> </ul>
Encapsulation	IP 40 (IEC 60529) with base support mounted
Shock	25 g (IEC 60068-2-27)
Vibration	2 g (IEC60068-2-6) and MIL-STD810G
<b>Physical data</b>	
Camera size (L × W × H)	104.1 × 49.6 × 46.6 mm (4.1 × 1.9 × 1.8 in.)
Tripod mounting	UNC ¼"-20 (on three sides)
Base mounting	4 × M3 thread mounting holes (bottom)
Housing material	Magnesium and aluminum



# FLIR A65 FOV 90 (30 Hz, ver. 2016)

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Shipping information	
Packaging, type	Cardboard box
List of contents	<ul style="list-style-type: none"><li>• Infrared camera with lens</li><li>• Base support</li><li>• Focus adjustment tool</li><li>• Printed documentation</li></ul>
EAN-13	7332558011621
UPC-12	845188012571
Country of origin	Sweden

### Supplies & accessories:

- T951004ACC; Ethernet cable CAT6, 2 m/6.6 ft.
- T198349; Base support
- T198348; Cable kit Mains (UK,EU,US)
- T198392; Table stand kit
- T911183; Gigabit PoE injector 16 W, with multi-plugs
- T127605ACC; Cable M12 Pigtail
- T127606ACC; Cable M12 Sync
- T198342ACC; Focus adjustment tool
- T198594ACC; Transport case Ax5
- T199356; FLIR Ax5 accessory starter kit
- T198584; FLIR Tools
- T198583; FLIR Tools+ (download card incl. license key)
- DSW-10000; FLIR IR Camera Player
- T199233; FLIR Atlas SDK for .NET
- T199234; FLIR Atlas SDK for MATLAB