

# FLIR A310

Safety: the Infrared eye that never sleeps

*The FLIR A310 camera offers an affordable and accurate temperature measurement solution for anyone who needs to solve problems that need built in “smartness” such as analysis, alarm functionality and autonomous communication using standard protocols. The FLIR A310 camera also has all the necessary features and functions to build distributed single- or multi-camera solutions utilizing standard Ethernet hardware and software protocols.*

*The FLIR A310 camera also has built in support to connect to industrial control equipment such as PLCs, and allows for sharing of analysis and alarm results and simple control using the Ethernet/IP and Modbus TCP field bus protocol.*

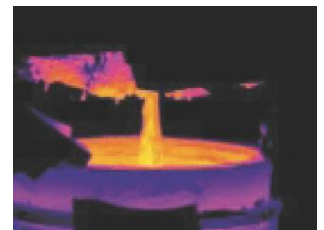


## Key Features:

- Support for EthernetIP field bus protocol (analyse, alarm, and simple camera control)
- Support for Modbus TCP field bus protocol (analyse, alarm, and simple camera control)
- Built-in extensive analysis functionality
- Extensive alarm functionality, as a function of analysis and more
- On schedule: file sending (FTP) or email (SMTP) of analysis results or images
- On alarms: file sending (FTP) or email (SMTP) of analysis results or images
- MPEG-4 streaming
- PoE (Power over Ethernet)
- Built-in web server
- General purpose I/O
- 100 Mbps Ethernet (100 m cable, wireless, fiber, etc.)
- Synchronization through SNTP
- Composite video output
- Multi-camera utility software: FLIR IP Config and FLIR IR Monitor included
- Open and well-described TCP/IP protocol for control and set-up
- 16-bit 320 × 240 images @ 7–8 Hz, radiometric
- Lenses: 25° included, 15° and 45° optional

## Typical applications:

- Safety with temperature alarms (multi-camera applications), fire prevention, critical vessel monitoring, and power utility asset management
- Volume-oriented industrial control (multi-camera installation is possible)



Process monitoring



Sub-station monitoring

# FLIR A310 Technical Specifications

<b>Imaging and optical data</b>	
Field of view (FOV)	25° x 18.8°
Minimum focus distance	0.4m
Focal Length	18mm
Spatial resolution	1.36mrad
Lens identification	Automation
F-number	1.3
Thermal sensitivity/ NETD	<0.05°C @ +30°C/ 50mK
Image frequency	30Hz
Focus	Automatic or manual (built in motor)
Zoom	1-8x continuous, digital, interpolating zooming on images
<b>Detector data</b>	
Detector type	Focal Plane Array (FPA), uncooled microbolometer
Spectral range	7.5-13µm
IR resolution	320 x 240 pixels
Detector pitch	25µm
Detector time constant	Typical 12ms
<b>Measurement</b>	
Object temperature range	-20°C to +120°C 0 to +350°C
Accuracy	±2°C or ±2% of reading
<b>Measurement analysis</b>	
Spotmeter	10
Area	10 boxes with max./min./average/position
Isotherm	1 with above/ below/ interval
Measurement Option	Measurement Mask Filter Schedule response: File sending (ftp), email (SMTP)
Difference temperature	Delta temperature between measurement functions or reference temperature
Reference temperature	Manually set or captured from any measurement function
Atmosphere transmission correction	Automatic, based on inputs for distance, atmospheric temperature and relative
Optics transmission correction	Automatic, based on signals from internal sensors
Emissivity correction	Variable from 0.01 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>Alarm</b>	
Alarm functions	6 automatic alarms on any selected measurement function, Digital In, Camera temperature, timer Digital Out, Log, store image, file sending (ftp), email (SMTP), notification
Alarm output	
<b>Set-up</b>	
Color palettes	Color palettes (BW, BW inv, Iron, Rain)
Set-up commands	Date/ time, Temperature°C
<b>Storage of images</b>	
Image storage type	Built-in memory for image storage
File formats	Standard JPEG, 16-bit measurement data included
<b>Ethernet</b>	
Ethernet	Control and image
Ethernet, type	100Mbps
Ethernet, standard	IEEE 802.3
Ethernet, connector type	RJ-45
Ethernet, communication	TCP/IP socket-based FLIR proprietary
Ethernet, video streaming	MPEG-4, ISO.IEC 14496-1 MPEG-4 ASP@L5
Ethernet, image streaming	16-bit 320 x 240 pixels @ 3 Hz
Ethernet, power	Power over Ethernet, PoE IEEE 802.3af class 0
Ethernet, protocols	TCP, UDP, SNMP, RTSP, RTP, HTTP, ICMP, IGMP, ftp, SMTP, SMB (CIFS), DHCP, MDNS (Bonjour), uPnP
<b>Digital input/ output</b>	
Digital input, purpose	Image tag (start/ stop/ general), Input ext. device (programmatically read)
Digital input	2 opto-isolated, 10-30 VDC
Digital output, purpose	Output to ext. device (programmatically set)
Digital output	2 opto-isolated, 10-30 VDC, max 100mA
Digital I/O, isolation voltage	500VRMS
Digital I/O, supply voltage	12/24 VDC, max 200 mA
Digital I/O, connector type	6-pole jackable screw terminal

<b>Composite video</b>	
Video out	Composite video output, PAL and NTSC compatible
Video, standard	CVBS (ITU-R-BT.470 PAL/ SMPTE 170M NTSC)
Video, connector type	Standard BNC connector
<b>Power system</b>	
External power operation	12/24 VDC, 24W absolute max
External power, connector type	2-pole jackable screw terminal
Voltage	Allowed range 10-30 VDC
<b>Environmental data</b>	
Operating temperature range	-15°C to +50°C
Storage temperature range	-40°C to +70°C
Humidity (operating and storage)	IEC 60068-2-30/24 h 95% relative humidity +25°C to +40°C
EMC	- EN 61000-6-2:2001 (Immunity) - EN 61000-6-3:2001 (Emission) - FCC 47 CFR Part 15 Class B (Emission)
Encapsulation	IP 40 (IEC 60529)
Bump	25g (IEC 60068-2-29)
Vibration	2g (IEC 60068-2-6)
<b>Physical data</b>	
Weight	0.7kg
Camera size (L x W x H)	170 x 70 x 70mm
Tripod mounting	UNC1/4"-20 (on three sides)
Base mounting	2 x M4 thread mounting holes (on three sides)
Housing material	Aluminium

<b>Scope of delivery</b>	
Packaging, contents	Hard transport case or cardboard box Infrared camera with lens Calibration certificate Ethernet™ cable Mains cable Power cable, pig-tailed Power supply Printed Getting Started Guide Printed Important Information Guide User documentation CD-ROM Utility CD-ROM Warranty extension card or Registration card
<b>Supplies &amp; Accessories</b>	

IR lens f = 30 mm, 15° incl. case  
 IR lens f = 10 mm, 45° incl. case  
 Close-up 4x (100 µm) incl. case  
 Close-up 2x (50 µm) incl. case  
 Lens 76 mm (6°) with case and mounting support for A/SC3XX  
 Lens 4 mm (90°) with case and mounting support for A/SC3XX  
 Close-up 1x (25 µm) incl. case and mounting support for A/SC3XX  
 High temp. option +1200°C/+2192°F for FLIR T/B2XX to T/B4XX and A/SC3XX Series  
 Power supply for A/SC3XX and A/SC6XX  
 Power cord EU  
 Power cord US  
 Power cord UK  
 Video cable, 3.0 m/9.8 ft.  
 Ethernet cable CAT-6, 2m/6.6 ft.  
 Power cable, pigtailed  
 Hard transport case for A/SC3XX and A/SC6XX series  
 Delivery Box for A/SC3XX  
 ThermoVision™ System Developers Kit Ver. 2.6  
 ITC Advanced General Thermography Course – attendance, 1 pers.  
 ITC Advanced General Thermography Course – group of 10 pers.  
 ITC Level 1 Thermography Course – attendance, 1 pers.  
 ITC Level 1 Thermography Course – group of 10 pers.  
 ITC Level 2 Thermography Course – attendance, 1 pers.  
 ITC Level 2 Thermography Course – group of 10 pers.

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