

# FLIR A615

Automation: speed up your design cycle with infrared

*The FLIR A615 camera has features and functions that make it the natural choice for anyone who uses PC software to solve problems and needs 640 x 480 pixel resolution. 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:

- Affordable
- GigE compliant
- GenICam compliant
- Trigg/synchronization/GPIO
- 16-bit 640 x 480 images @ 50 Hz, signal, temperature linear, and radiometric
- Windowing mode: 640 x 240 @ 100 Hz or 640 x 120 @ 200 Hz
- Compliant with any software that supports GenICam, including National Instruments IMAQ Vision and Stemmers Common Vision Blox
- Open and well described TCP/IP protocol for control and set-up

## Typical applications:

- High-end infrared machine vision that needs temperature measurement
- Slag detection
- Food processing
- Electronics testing
- Power resistor testing
- Automotive

### IR Automation in Automobile Industry

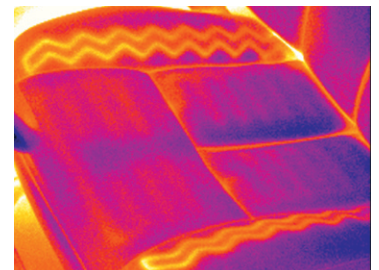
Cars and commercial vehicles, engine manufacturing and subcontractors serving the industry:

- Soldering and welding
- Car seat heating
- Verification of window defrosting
- Heating, air conditioning functions
- Casting of plastic or metallic parts
- Quality checking of laminated parts such as dashboards
- Quality checking of leather upholstery
- Friction control of tires

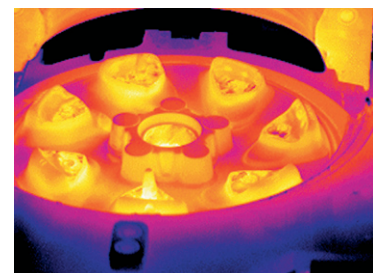
### IR Automation in Electronics

Electronics design, PCB and component manufacture and electronics assembly:

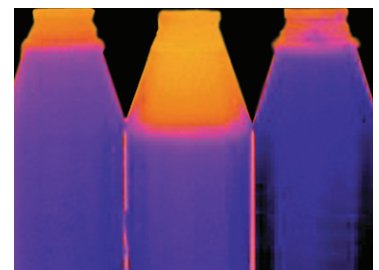
- PCB testing, validation and verification
- Power electronics design
- Fault tracing in board assemblies



Automotive - car seat heating



Engines manufacturing



Food processing

# FLIR A615 Technical Specifications

<b>Imaging and optical data</b>	
Field of view (FOV)	25° x 18.8°
Minimum focus distance	0.4m
Focal Length	24.5mm
Spatial resolution	0.69mrad
Lens identification	Automation
F-number	1.0
Thermal sensitivity/ NETD	<0.05°C @ + 30°C/ 50mK
Image frequency	50Hz (100/200 Hz with windowing)
Focus	Automatic or manual (built in motor)
<b>Detector data</b>	
Detector type	Focal Plane Array (FPA), uncooled microbolometer
Spectral range	7.5-13µm
IR resolution	640 x 480pixels
Detector pitch	17µm
Detector time constant	Typical 8ms
<b>Measurement</b>	
Object temperature range	-20°C to + 150°C 0 to +650°C 300 to +2000°C
Accuracy	±2°C or ±2% of reading
<b>Measurement analysis</b>	
Atmosphere 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 0.01 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>USB</b>	
USB	Control and image
USB, standard	USB 2 HS
USB, connector type	USB Mini-B
USB, communication	TCP/IP socket-based FLIR proprietary
USB, image streaming	16-bit 640 x 480 pixels @ 25Hz 16-bit 640 x 240 pixels @ 50Hz 16-bit 640 x 120 pixels @ 100Hz - Signal linear - Temperature linear - Radiometric
USB, protocols	TCP, UDP, SNTP, RTSP, RTP, HTTP, ICMP, IGMP, ftp, SMTP, SMB (CIFS), DHCP, MDNS (Bonjour), nPnP
<b>Ethernet</b>	
Ethernet	Control and image
Ethernet, type	Gigabit Ethernet
Ethernet, standard	IEEE 802.3
Ethernet, connector type	RJ-45
Ethernet, communication	TCP/IP socket-based FLIR proprietary and GenICam protocol
Ethernet, image streaming	16-bit 640 x 480 pixels @ 50 Hz 16-bit 640 x 240 pixels @ 100 Hz 16-bit 640 x 120 pixels @ 200 Hz - Signal linear - Temperature linear - Radiometric GigE Vision and GenICam compatible
Ethernet, protocols	TCP, UDP, SNTP, 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>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)	216 x 73 x 75mm
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 USB cable User documentation CD-ROM Utility CD-ROM Warranty extension card or Registration card

<b>Supplies &amp; Accessories</b>	
Power supply for A/SC3XX and A/SC6XX	
Power cord EU	
Power cord US	
Power cord UK	
USB cable Std A <-> Mini-B, 2 m/6.6 ft.	
Ethernet cable CAT-6, 2m/6.6 ft.	
Power cable, pigtailed	
Hard transport case for A/SC3XX and A/SC6XX series	
ThermoVision™ System Developers Kit Ver. 2.6	
ITC Advanced General Thermography Course - attendance, 1 pers.	
ITC Advanced General Thermography Course- group of 10 pers.	
IITC 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.	



Accessories

Specifications and prices subject to change without notice. Copyright © 2010 FLIR Systems. All right reserved including the right of reproduction in whole or in part in any form.

**Asia Pacific Headquarter  
Hong Kong**  
FLIR Systems Co Ltd.  
Room 1613 – 16, Tower 2  
Grand Central Plaza  
138 Shatin Rural Committee  
Road, N. T., Hong Kong  
Tel: +852 2792 8955  
Fax: +852 2792 8952  
Email: flir@flir.com.hk

**China Head Office - Shanghai**  
FLIR Systems (Shanghai) Co., Ltd  
Tel: +86 21 5169 7628  
Fax: +86 21 5466 0289  
e-mail: info@flir.cn

**Japan Office - Tokyo**  
FLIR Systems Japan K.K.  
Tel: +81 3 6277 5681  
Fax: +81 3 6277 5682  
e-mail: info@flir.jp

**Korea Office - Seoul**  
FLIR Systems Korea Co., Ltd  
Tel: +82 2 565 2714  
Fax: +82 2 565 2718  
e-mail: sales@flirkorea.com

**Taiwan Representative Office**  
Tel: +886 2 27579662  
Fax: +886 2 27576723  
e-Mail: flir@flir.com.hk

**India Representative Office**  
Tel: +91 11 4606 7100  
Fax: +91 11 4606 7110  
e-mail: flir@flir.com.hk

**FLIR®**  
www.flir.com/thg