

Part number:

**55001-0102**

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Legal disclaimer

Specifications subject to change without further notice. Camera models and accessories subject to regional market considerations. License procedures may apply.

Information and equipment described herein may require US Government authorization for export purposes. Diversion contrary to US law is prohibited.



General description

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 × 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. The camera is equipped with the standard 25° lens.

Key features:

- Affordable
- GigE compliant
- GenICam compliant
- Trigg/synchronization/GPIO
- 16-bit 640 × 480 images @ 50 Hz, signal, temperature linear, and radiometric
- Windowing mode: 640 × 240 @ 100 Hz or 640 × 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

Imaging and optical data

IR resolution	640 × 480 pixels
Thermal sensitivity/NETD	< 0.05°C @ +30°C (+86°F) / 50 mK
Field of view (FOV)	25° x 19° (31° diagonal)
Minimum focus distance	0.25 m (0.82 ft.)
Focal length	24.6 mm (0.97 in.)
Spatial resolution (IFOV)	0.68 mrad
Lens identification	Automatic
F-number	1.0
Image frequency	50 Hz (100/200 Hz with windowing)
Focus	Automatic or manual (built in motor)

Detector data

Detector type	Focal Plane Array (FPA), uncooled microbolometer
Spectral range	7.5–14 μm
Detector pitch	17 μm
Detector time constant	Typical 8 ms

Measurement

Object temperature range	-20 to +150°C (-4 to +302°F) 100 to +650°C (+212 to +1202°F) 300 to +2000°C (+572 to +3632°F)
Accuracy	±2°C (±3.6°F) or ±2% of reading

Measurement analysis

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 0.01 to 1.0

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## Measurement analysis

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

## USB

USB	<ul style="list-style-type: none"> <li>Control and image</li> </ul>
USB, standard	USB 2 HS
USB, connector type	<ul style="list-style-type: none"> <li>USB Mini-B</li> </ul>
USB, communication	TCP/IP socket-based FLIR proprietary
USB, image streaming	16-bit 640 × 480 pixels @ 25 Hz - Signal linear - Temperature linear - Radiometric
USB, protocols	TCP, UDP, SNTP, RTSP, RTP, HTTP, ICMP, IGMP, ftp, SMTP, SMB (CIFS), DHCP, MDNS (Bonjour), uPnP

## Ethernet

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 × 480 pixels @ 50 Hz 16-bit 640 × 240 pixels @ 100 Hz 16-bit 640 × 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

## Digital input/output

Digital input, purpose	Image tag (start, stop, general), Image flow ctrl. (Stream on/off), 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 100 mA
Digital I/O, isolation voltage	500 VRMS
Digital I/O, supply voltage	12/24 VDC, max 200 mA
Digital I/O, connector type	6-pole jackable screw terminal

## Power system

External power operation	12/24 VDC, 24 W absolute max
External power, connector type	2-pole jackable screw terminal
Voltage	Allowed range 10–30 VDC

## Environmental data

Operating temperature range	–15°C to +50°C (+5°F to +122°F)
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 61000-6-2:2001 (Immunity)</li> <li>EN 61000-6-3:2001 (Emission)</li> <li>FCC 47 CFR Part 15 Class B (Emission)</li> </ul>
Encapsulation	IP 30 (IEC 60529)
Bump	25 g (IEC 60068-2-29)

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### Environmental data

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Vibration	2 g (IEC 60068-2-6)
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### Physical data

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Weight	0.90 kg (1.98 lb.)
Camera size (L x W x H)	216x 73 x 75 mm (8.5 x 2.9 x 3.0 in.)
Camera size, excl. lens (L x W x H)	203x 73 x 75 mm (8.0 x 2.9 x 3.0 in.)
Tripod mounting	UNC ¼"-20 (on three sides)
Base mounting	2 x M4 thread mounting holes (on three sides)
Housing material	Aluminum
Comments to physical data	Outline dimensional drawings and STEP files can be found at <a href="http://support.flir.com">http://support.flir.com</a>

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### Scope of delivery

- Cardboard box
  - Infrared camera with lens
  - Calibration certificate
  - Downloads brochure
  - Ethernet™ cable
  - Mains cable
  - Power cable, pig-tailed
  - Power supply
  - Printed Getting Started Guide
  - Printed Important Information Guide
  - Service & training brochure
  - USB cable
  - User documentation CD-ROM
  - Utility CD-ROM
  - Warranty extension card or Registration card
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### Optional Accessories

- T197914 IR lens, f=41.3 mm with case (15°)
  - T197922 IR lens, f=24.6 mm with case (25°)
  - T197915 IR lens, f=13.1 mm with case (45°)
  - T198059 Close-up IR lens, 2.9x (50 µm) with case
  - T198060 Close-up IR lens, 5.8x (100 µm) with case
  - 1910400 Power cord EU
  - 1910401 Power cord US
  - 1910402 Power cord UK
  - T910922 Power supply, incl. multi plugs, for A/SC3xx and A/SC6xx
  - 1910423 USB cable Std A <-> Mini-B
  - T951004 Ethernet cable CAT-6, 2m/6.6 ft.
  - 1910586 Power cable, pigtailed
  - T197871 Hard transport case for A/SC3xx and A/SC6x5 series
  - T197870 Cardboard box for A/SC3xx and A/SC6x5 series
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### Optional Software

- T197038 ThermoVision™ System Developers Kit Ver. 2.6
  - T197039 ThermoVision™ LabVIEW® Digital Toolkit Ver. 3.3
  - DSW-10000 FLIR IR Camera Player
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## T197914; IR lens, f=41.3 mm with case (15°)



### General description

The 15° lens is a popular lens accessory and provides 1.7x magnification compared to the standard lens. Ideal for small or distant targets such as overhead power lines.

### Technical data

Field of view (FOV)	15° x 11° (19° diagonally)
Minimum focus distance	500 mm (19.69 in.)
Focal length	41.3 mm (1.63 in.)
Spatial resolution (IFOV)	0.41 mrad
Lens identification	Automatic
F-number	1.0
Number of lenses	3 (3 asph)
MTF @ 70% of FOV	Normal requirements (52%)
Distortion	3%
Weight	0.190 kg (0.419 lb.)
Size (L x D)	47 x 67 mm (1.85 x 2.64 in.)
Front lens diameter	52 mm (2.05 in.)

### Scope of delivery

- Lens
- Lens case
- Front lens cap
- Rear lens cap

v1.03

## T197922; IR lens, f=24.6 mm with case (25°)



### General description

The standard 25° lens is suitable for the majority of applications.

### Technical data

Field of view (FOV)	25° x 19° (31° diagonally)
Minimum focus distance	250 mm (9.84 in.)
Focal length	24.6 mm (0.97 in.)
Spatial resolution (IFOV)	0.69 mrad
Lens identification	Automatic

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### Technical data

F-number	1.0
Number of lenses	3 (3 asph)
MTF @ 70% of FOV	Normal requirements (52%)
Distortion	3%
Weight	0.160 kg (0.353 lb.)
Size (L x D)	41 x 67 mm (1.61 x 2.64 in.)
Front lens diameter	32 mm (1.26 in.)

### Scope of delivery

- Lens
- Lens case
- Front lens cap
- Rear lens cap

v1.03

## T197915; IR lens, f=13.1 mm with case (45°)



### General description

This wide angle lens has a field of view almost double that of the standard 25° lens. Perfect for wide or tall targets or when working in confined areas.

### Technical data

Field of view (FOV)	45° x 34° (55° diagonally)
Minimum focus distance	150 mm (5.91 in.)
Focal length	13.1 mm (0.52 in.)
Spatial resolution (IFOV)	1.29 mrad
Lens identification	Automatic
F-number	1.0
Number of lenses	3 (3 asph)
MTF @ 70% of FOV	Normal requirements (52%)
Distortion	3%
Weight	0.209 kg (0.461 lb.)
Size (L x D)	50 x 67 mm (1.97 x 2.64 in.)
Front lens diameter	30 mm (1.18 in.)

### Scope of delivery

- Lens
- Lens case
- Front lens cap
- Rear lens cap

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## T198059; Close-up IR lens, 2.9x (50 μm) with case



### General description

For R&D usage or development purposes. As an example looking at PCB's or small electronic components.

### Technical data

Field of view (FOV)	32 × 24 mm (40 mm diagonally)
Magnifying factor	2.9x
Working distance	84 mm
Depth of field	0.65 mm
Focal length	78 mm
Spatial resolution (IFOV)	50 μm
Lens identification	Manual
F-number	1.0
Number of lenses	2 (2 asph)
MTF @ 70% of FOV	Normal requirements (52%)
Distortion	3%
Lens note	The close-up lens is mounted on the 25° lens
Weight	0.197 kg (0.43 lb.)
Size (L × D)	32 × 67 mm
Front lens diameter	53 mm

### Scope of delivery

- Lens
- Front lens cap
- Rear lens cap
- Case
- Instruction for mounting close-up lenses

v1.02

## T198060; Close-up IR lens, 5.8x (100 μm) with case



### General description

For R&D usage or development purposes. As an example looking at PCB's or small electronic components.

### Technical data

Field of view (FOV)	64 × 48 mm (80 mm diagonally)
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**Technical data**

Magnifying factor	5.8x
Working distance	172 mm
Depth of field	2.8 mm
Focal length	149 mm
Spatial resolution (IFOV)	100 µm
Lens identification	Manual
F-number	1.0
Number of lenses	2 (2 asph)
MTF @ 70% of FOV	Normal requirements (52%)
Distortion	3%
Lens note	The close-up lens is mounted on the 25° lens
Weight	0.176 kg (0.39 lb.)
Size (L x D)	28 x 67 mm
Front lens diameter	53 mm

**Scope of delivery**

- Lens
- Front lens cap
- Rear lens cap
- Case
- Instruction for mounting close-up lenses

v1.03

## 1910400; Power cord EU



**General description**

Power cord (EU) for the power supply (1910585) used together with the FLIR A/SC3xx and A/SC6xx series. The power supply (1910585) itself is discontinued and replaced by a new power supply (which includes multiplugs and another power cable).

**Technical data**

AC operation	250 V 16 A
Cable length	2.0 m (6.6 ft.)
Color	Black

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## 1910401; Power cord US



### General description

Power cord (US) for the power supply (1910585) used together with the FLIR A/SC3xx and A/SC6xx series. The power supply (1910585) itself is discontinued and replaced by a new power supply (which includes multiplugs and another power cable).

### Technical data

AC operation	125 V 15 A
Cable length	2.0 m (6.6 ft.)
Color	Black

v1.01

## 1910402; Power cord UK



### General description

Power cord (UK) for the power supply (1910585) used together with the FLIR A/SC3xx and A/SC6xx series. The power supply (1910585) itself is discontinued and replaced by a new power supply (which includes multiplugs and another power cable).

### Technical data

AC operation	250 V 13 A
Cable length	2.0 m (6.6 ft.)
Color	Black

v1.01



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## T910922; Power supply, incl. multi plugs, for A/SC3xx and A/SC6xx



### General description

Power supply, incl. multi plugs

### Technical data

AC operation	100–240 VAC, 50/60 Hz, 12 VDC out
Power	2000 mA at 12 VDC
Size (L x W x H)	81 x 47 x 34 mm (3.2 x 1.9 x 1.3 in.)
Cable length	1.5 m (4.9 ft.)
Color	Black

### Scope of delivery

- Power supply including cable
- EU plug
- UK plug
- US plug
- AU plug

v1.0

## 1910423; USB cable Std A <-> Mini-B



### General description

This cable is used to connect the infrared camera with a computer, using the USB protocol.

### Technical data

Weight	60 g (2.1 oz.)
Cable length	1.8 m (5.9 ft.)
Connector	Standard USB-A to USB Mini-B

v1.02

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## T951004; Ethernet cable CAT-6, 2m/6.6 ft.



### General description

This cable is used to connect the infrared camera to Ethernet.

### Technical data

Weight	80 g (2.8 oz.)
Cable length	2.0 m (6.6 ft.)
Connector	RJ-45 to RJ-45
Cable type	CAT-6

v1.01

## 1910586; Power cable, pigtailed



### General description

This cable is used, when a separate power supply is used (not the one supplied with the camera)

### Technical data

Weight	75 g (2.6 oz.)
Cable length	2.0 m (6.6 ft.)
Connector	Pigtailed
Color	Black

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## T197871; Hard transport case for A/SC3xx and A/SC6x5 series



### General description

Rugged, watertight plastic case for FLIR A/SC3XX and A/SC65X series. Holds all items neatly and securely. The case can be locked with padlocks and features a breather valve to prevent pressure build-up in airplane cargo holds.

### Technical data

Weight	3.1 kg (6.8 lb.)
Size (L x W x H)	463 x 346 x 172 mm (18.2 x 13.6 x 6.8 in.)
Color	Black

### Scope of delivery

- Hard transport case

v1.02

## T197870; Cardboard box for A/SC3xx and A/SC6x5 series



### General description

Cardboard box with plastic handle for the FLIR A/SC3XX and A/SC65X series. Holds all items neatly.

### Technical data

Weight	0.86 kg (1.9 lb.)
Size (L x W x H)	455 x 300 x 165 mm (17.9 x 11.8 x 6.5 in.)
Material	Cardboard

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## T197038; ThermoVision™ System Developers Kit Ver. 2.6



### General description

ThermoVision™ System Developers Kit

#### Key features:

- Supports communication and broadcasting via FireWire™, Ethernet, and USB interfaces.
- Gives the user full control of the camera.
- Allows the user to set alarm conditions and measurement functions in the camera
- Allows the user to define I/O functionality (FLIR A series).
- Based on ActiveX technology.
- Supports acquisition of images through FireWire™, Ethernet, and USB interfaces.
- Reads from and writes to file in FLIR Systems' proprietary file format and writes to files in FLIR Systems' open floating point format (\*.fpf).
- Converts 16-bit absolute pixels into temperature pixels and several intermediate types of pixels formats, for maximum user flexibility. Applies to all camera models with temperature measurement capabilities.
- Allows 16-bit temperature linear outputs from FLIR A series cameras.
- Includes method that allows using individual emissivity value correction on any single pixel or condensed measuring value – e.g. average, minimum etc.
- Supports conditional recording to file through FireWire™, Ethernet, and USB interfaces.

Users with licenses for the previous version can download a free upgrade via the following link:  
<http://support.flir.com/SwDownload/app/RssSWDownload.aspx?ID=62>

### Release notes

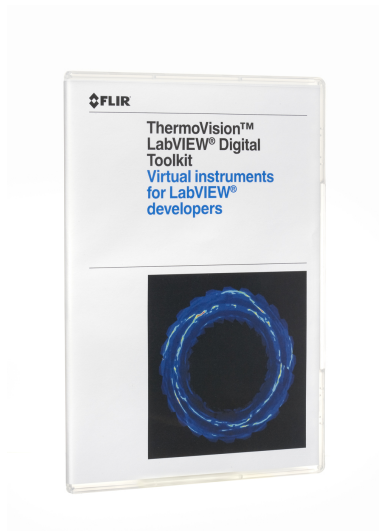
Version	ThermoVision 2.6 SP2
New features	<ul style="list-style-type: none"> <li>• --- News in SP2:</li> <li>• Support for FLIR GF3XX series</li> <li>• Support for windowing in FLIR A615 and FLIR SC6x5</li> <li>• Support for windowing in FLIR SC6x0</li> <li>• Various bug fixes</li> </ul>

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## T197039; ThermoVision™ LabVIEW® Digital Toolkit Ver. 3.3



### General description

The ThermoVision LabVIEW Toolkit is a set of VIs (virtual instruments) for cameras that support alarms, measurement functions, and I/O functionality. Through LabVIEW, you can use these VIs as sub-VIs to manage communications with a FLIR IR camera in digital mode. You can also generate true temperature images from images acquired through LabVIEW, and can use the LabVIEW IR Measurement and Display tools to analyze the temperatures of imaged objects.

#### Key features:

- Set up communications between LabVIEW VI and a FLIR IR camera
- Capture and collect images via FireWire or Ethernet interfaces
- Adjust the camera configuration parameters and focus as you view a live image
- Control the camera calibration
- Send any other camera command to the camera
- Generate a true temperature image from a 16-bit image acquired using the camera's FireWire or Ethernet interfaces
- Close communications to the IR camera

Users with licenses for the previous version can download a free upgrade via the following link:  
<http://support.flir.com/SwDownload/app/RssSWDownload.aspx?ID=63>

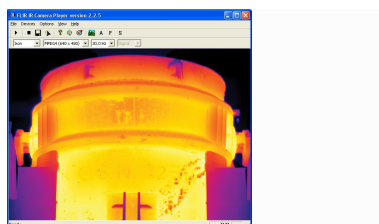
Note: Only supports National Instrument 32-bit Labview

### Release notes

Version	3.3
New features	<ul style="list-style-type: none"> <li>• Windows 7 32- and 64-bit support</li> <li>• Support for FLIR A615 and FLIR SC6X5 (including windowing)</li> <li>• Support for windowing in FLIR SC660</li> <li>• Various bug fixes</li> <li>• New example VIs</li> </ul>

v1.01

## DSW-10000; FLIR IR Camera Player



### General description

FLIR IR Camera Player is a PC-based remote control and viewer that you can use with cameras from FLIR Systems.

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### General description

You can perform one or more of the following with FLIR IR Camera Player:

- Record a video stream from the camera.
- Save a frame from the video stream as a snapshot image (\*.bmp).
- Autofocus, focus far, and focus near.
- Autoadjust the camera image.
- Freeze the camera image.
- Save a camera image in the camera.
- Change Color palette.
- Add an image description and a text comment to an image.

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You connect a camera in one of the following ways:

- Ethernet
- FireWire
- USB

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### Download

This software is a freeware. To download, click the following link:

<http://support.flir.com/SwDownload/app/RssSWDownload.aspx?ID=89>

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### Release notes

Version	2.2.6
New features	<ul style="list-style-type: none"><li>• --- News in 2.2.6</li><li>• Various bug fixes.</li><li>• --- News in 2.2.5</li><li>• Color palette menu.</li><li>• Option to record AVI video clips from cameras that deliver MPEG or H264 image streams.</li><li>• Option to compress the FLIR Researcher formats F7M0 and F7M2 to AVI.</li><li>• Support for FLIR Exx series cameras.</li><li>• Support for FLIR T6xx series cameras.</li></ul>

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### System requirements

Operating system	<ul style="list-style-type: none"><li>• Windows XP, 32-bit</li><li>• Windows Vista, 32-bit/64-bit</li><li>• Windows 7, 32-bit/64-bit</li></ul>
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