The FLIR SC655 camera is an excellent choice for those who want to work in R&D and require the highest frame rates and 640 x 480 pixel resolution. For those who need to use the camera in R&D, it is highly recommended to use the FLIR ResearchIR software from FLIR Systems.

Key features:
• Affordable
• 16-bit 640 x 480 images @ 50 Hz
• Start-and-stop recording in FLIR ResearchIR using digital input
• Windowing mode: 640 x 240 @ 100 Hz or 640 x 120 @ 200 Hz

Typical applications:
• Mid- or high-end industrial R&D

Imaging and optical data
Field of view (FOV) 25° × 18.8°
Minimum focus distance 0.4 m (1.31 ft.)
Focal length 24.5 mm (0.96 in.)
Spatial resolution (IFOV) 0.69 mrad
Lens identification Automatic
F-number 1.0
Thermal sensitivity/NETD < 0.05°C @ +30°C (+86°F) / 50 mK
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 7.5–13 µm
IR resolution 640 x 480 pixels
Detector pitch 17 µm
Detector time constant Typical 8 ms

Measurement
Object temperature range –30 to +150°C (–2°F to +302°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
Emmissivity 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

USB
USB, image streaming 16-bit 640 x 480 pixels @ 25 Hz
16-bit 640 x 240 pixels @ 50 Hz
16-bit 640 x 120 pixels @ 100 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, communication TCP/IP socket-based FLIR proprietary and GenICam protocol

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 +55°C (+5°F to +122°F)
Storage temperature range –40°C to +70°C (+4°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
• 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 25 g (IEC 60068-2-9)
Vibration 2 g (IEC 60068-2-6)

Physical data
Weight 0.7 kg (1.54 lb.)
Camera size (L × W × H) 216 x 73 x 75 mm (8.5 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 Aluminium

www.flir.com/thg

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### Scope of delivery
- 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

### Optional Accessories
- 1910585 Power supply for A/SC3XX and A/SC6XX
- 1910400 Power cord EU
- 1910401 Power cord US
- 1910402 Power cord UK
- 1910423 USB cable Std A <-> Mini-B, 2 m/6.6 ft.
- 1951004 Ethernet cable CAT-6, 2 m/6.6 ft.
- 1910586 Power cable, pig-tailed
- 1196940 Hard transport case for A/SC3XX and A/SC6XX series

### Optional Software
- T197038 ThermoVision™ System Developers Kit Ver. 2.6
- T197453 FLIR ResearchIR
- T197454 FLIR QuickPlot
## Optional Accessories

### 1910585; Power supply for A/SC3XX and A/SC6XX

<table>
<thead>
<tr>
<th>General description</th>
<th>Power supply for the A320-series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical data</td>
<td>AC operation: 100–240 V, 50–60 Hz, 1.8 A output: 12 VDC 3.0 A</td>
</tr>
<tr>
<td></td>
<td>Power: 36 W</td>
</tr>
<tr>
<td></td>
<td>Size (L x W x H): 120 x 60 x 35 mm (4.7 x 2.4 x 1.4 in.)</td>
</tr>
<tr>
<td></td>
<td>Cable length: 2.0 m (6.6 ft.)</td>
</tr>
</tbody>
</table>

### 1910402; Power cord UK

<table>
<thead>
<tr>
<th>General description</th>
<th>Power cord (UK) for the power supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical data</td>
<td>AC operation: 250 V 13 A</td>
</tr>
<tr>
<td></td>
<td>Cable length: 2.0 m (6.6 ft.)</td>
</tr>
<tr>
<td></td>
<td>Color: Black</td>
</tr>
</tbody>
</table>

### 1910423; USB cable Std A <-> Mini-B, 2 m/6.6 ft.

<table>
<thead>
<tr>
<th>General description</th>
<th>This cable is used to connect the infrared camera with a computer, using the USB protocol.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical data</td>
<td>Weight: 60 g (2.1 oz.)</td>
</tr>
<tr>
<td></td>
<td>Cable length: 1.8 m (6.0 ft.)</td>
</tr>
<tr>
<td></td>
<td>Connector: Standard USB-A to USB Mini-B</td>
</tr>
</tbody>
</table>

### 1910400; Power cord EU

<table>
<thead>
<tr>
<th>General description</th>
<th>Power cord (EU) for the power supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical data</td>
<td>AC operation: 250 V 16 A</td>
</tr>
<tr>
<td></td>
<td>Cable length: 2.0 m (6.6 ft.)</td>
</tr>
<tr>
<td></td>
<td>Color: Black</td>
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</tbody>
</table>

### 1910401; Power cord US

<table>
<thead>
<tr>
<th>General description</th>
<th>Power cord (US) for the power supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical data</td>
<td>AC operation: 125 V 15 A</td>
</tr>
<tr>
<td></td>
<td>Cable length: 2.0 m (6.6 ft.)</td>
</tr>
<tr>
<td></td>
<td>Color: Black</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>General description</th>
<th>This cable is used to connect the infrared camera to Ethernet.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical data</td>
<td>Weight: 80 g (2.8 oz.)</td>
</tr>
<tr>
<td></td>
<td>Cable length: 2.0 m (6.6 ft.)</td>
</tr>
<tr>
<td></td>
<td>Connector: RJ-45 to RJ-45</td>
</tr>
<tr>
<td></td>
<td>Cable type: CAT-6</td>
</tr>
</tbody>
</table>
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

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>75 g (2.6 oz.)</td>
</tr>
<tr>
<td>Cable length</td>
<td>2.0 m (6.6 ft.)</td>
</tr>
<tr>
<td>Connector</td>
<td>Pigtailed</td>
</tr>
<tr>
<td>Color</td>
<td>Black</td>
</tr>
</tbody>
</table>

1196940; Hard transport case for A/SC3XX and A/SC6XX series

General description
Hard transport case for FLIR A3XX series
New features

- New license handling. It is now possible to de-activate/reactivate a program to move programs between computers.
- Emittivity calculator.
- Line profile.
- Cursor on line/profile.
- Plot has been reworked to improve usability.
- Export plot data to *.csv clipboard.
- Export single image and sequence to *.csv data file.
- Export screenshot to file (and copy to clipboard) for plot, profile and image.
- Delta measurement added.
- Invert palette.
- Change palette color distribution.
- Added palette preview in palette chooser.
- All context menus have been reworked and improved.
- Scale control has been redesigned graphically.
- Improved usability for adding new tabs and opening images.
- Windows® 7, 32 and 64-bit support.
- Simplified Chinese language support.
- Traditional Chinese language support.
- Support for UVC (USB Video Class).

Scope of delivery

- FLIR ResearchIR
- FLIR QuickPlot

System requirements

- Operating system
  - Windows XP, 32-bit
  - Windows Vista, 32-bit
  - Windows Vista, 64-bit
  - Windows 7, 32-bit
  - Windows 7, 64-bit

T197453; FLIR ResearchIR

General description

FLIR ResearchIR is a part of the FLIR R&D software family. It is aimed for more advanced users that need to monitor thermal events that are more agile or transient. FLIR ResearchIR visualizes thermal patterns and enables viewing, pre- and post recording and storing images at high speed. With FLIR ResearchIR it is possible to do post processing of fast thermal events as well as to use analysis value conditional to start/stop recording.

Key features:

- Visualizes thermal patterns
- Possible to view, record and store images at high speed
- Allows for post processing of fast thermal events
- Possibility to generate time-temperature plots
- Possibility to generate profiles from line-tool
- Possible to use analysis value conditional to start/stop recording
- Pre- and Post recording
- Unlimited number of analysis functions (spot, line, area)
- Possibility to export all graph objects: image, plot and profile to clipboard or file either as picture or csv-data

Typical applications:

- The transient behavior of a Power supply or one of its components during power up when altering the load or any other parameter
- Evaluating the transient behavior of a car brake when braking and when altering the material in the brakes

Release notes

Version

FLIR ResearchIR 1.2 SP1

T197454; FLIR QuickPlot

General description

FLIR QuickPlot is part of the FLIR R&D software family. It is specifically designed for entry- and mid level R&D users that want to get an understanding on thermal events for design, product or process. The software allows the user to visualize thermal patterns, to record and store thermal image sequences, and to create time-temperature plots for further analysis.

Key features:

- Visualizes thermal patterns
- Acts as multiple spot pyrometers
- Non-invasive, Non-contact
- Possible to record and store image sequences for later retrieval
- Possibility to generate time-temperature plots

Typical applications:

- Monitoring of a cars exterior temperature pattern in climate test chamber
- Monitoring of surface temperatures on devices when they are subjected to a life cycle test in an climate chamber
- Monitoring of surface temperature on devices when loading conditions are changed. For an example Power supplies, cooling devices and moving mechanics

Release notes

Version

FLIR QuickPlot 1.2 SP1

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New features

• New license handling. It is now possible to de-activate/activate a program to move programs between computers.
• Emissivity calculator.
• Plot has been reworked to improve usability.
• Export plot data to *.csv/clipboard.
• Export profile data to *.csv/clipboard.
• Export screenshot to file (and copy to clipboard) for plot, profile and image.
• Delta measurement added.
• Circle tool added to FLIR QuickPlot.
• Invert palette.
• Change palette color distribution.
• Added palette preview in palette chooser.
• All context menus has been reworked and improved.
• Scale control has been redesigned graphically.
• Improved usability for adding new tabs and opening images.
• Support for more cameras: ThermaCAM™ S65, ThermoVision™ A20 and ThermoVision™ A40.
• Windows® 7, 32 and 64-bit support.
• Simplified Chinese language support.
• Traditional Chinese language support.
• Support for UVC (USB Video Class).

Scope of delivery

• FLIR QuickPlot
• Getting Starting Guide

System requirements

<table>
<thead>
<tr>
<th>Operating system</th>
<th>Windows XP, 32-bit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Windows Vista, 32-bit</td>
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<tr>
<td></td>
<td>Windows Vista, 64-bit</td>
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<tr>
<td></td>
<td>Windows 7, 32-bit</td>
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<tr>
<td></td>
<td>Windows 7, 64-bit</td>
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</tbody>
</table>