Thermal imaging cameras for Predictive Maintenance

Electrical Maintenance

Mechanical Maintenance

Utilities

Energy Loss
FLIR Systems: the world leader in thermal imaging cameras

FLIR Systems is the world leader in the design, manufacturing and marketing of thermal imaging systems for a wide variety of commercial, industrial and government applications.

FLIR Systems’ thermal imaging systems use state-of-the-art infrared imaging technology that detects infrared radiation - or heat. Based on detected temperature differences, thermal imaging cameras can create a crisp image. Complicated algorithms make it also possible to read correct temperature values from this image. We design and manufacture all of the critical technologies inside our products, including detectors, electronics, and special lenses ourselves.

Rapidly emerging markets and organization
Interest for thermal imaging has grown considerably over the last few years in a large variety of markets. To face this increased demand, FLIR Systems has expanded its organization drastically. Today we employ more than 2,700 people. Together, these infrared specialists realize a consolidated annual turnover of more than 1 billion US dollars. This makes FLIR Systems the largest manufacturer of commercial thermal imaging cameras in the world.

Manufacturing capabilities
FLIR Systems currently operates 6 manufacturing plants: three in the USA (Portland, Boston and Santa Barbara, California) one in Stockholm, Sweden, one in Estonia and one in Paris, France.

Thermal imaging: more than building a camera
There is more to the world of thermal imaging than building a camera. FLIR Systems is not only committed to providing you with the best camera, we are also able to offer you the best software, service and training to suit your thermal imaging needs.
INFRARED:
more than meets the eye

**Infrared - part of the electromagnetic spectrum**

Our eyes are detectors that are designed to detect visible light (or visible radiation). There are other forms of light (or radiation) that we cannot see. The human eye can only see a very small part of the electromagnetic spectrum. At one end of the spectrum we cannot see ultraviolet light, while at the other end our eyes cannot see infrared. Infrared radiation lies between the visible and microwave portions of the electromagnetic spectrum. The primary source of infrared radiation is heat or thermal radiation.

Any object that has a temperature above absolute zero (-273.15 degrees Celsius or 0 Kelvin) emits radiation in the infrared region. Even objects that we think of as being very cold, such as ice cubes, emit infrared radiation. We experience infrared radiation every day. The heat that we feel from sunlight, a fire or a radiator is all infrared. Although our eyes cannot see it, the nerves in our skin can feel it as heat. The warmer the object, the more infrared radiation it emits.

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**The infrared camera**

Infrared energy (A) coming from an object is focused by the optics (B) onto an infrared detector (C). The detector sends the information to sensor electronics (D) for image processing. The electronics translate the data coming from the detector into an image (E) that can be viewed in the viewfinder or on a standard video monitor or LCD screen.

Infrared thermography is the art of transforming an infrared image into a radiometric one, which allows temperature values to be read from the image. In order to do this, complex algorithms are incorporated into the infrared camera.
Why use thermal imaging cameras?

Why would you choose a FLIR thermal imaging camera? There are other technologies available to help you measure temperatures in a non-contact mode. Infrared thermometers for example.

**Infrared thermometers vs thermal imaging cameras**

Infrared (IR) thermometers are reliable and very useful for single-spot temperature readings, but, for scanning large areas or components, it’s easy to miss critical components that may be near failure and need repair.

A FLIR thermal imaging camera can scan entire motors, components, or panels at once - never missing any overheating hazards, no matter how small.

**Use thousands of infrared thermometers at the same time**

With an infrared thermometer you are able to measure the temperature at one single spot. FLIR thermal imaging cameras can measure temperatures on the entire image. The i3 has an image resolution of 60 x 60 pixels. This means that it is equal to using 3,600 IR thermometers at the same time. If we look at the FLIR P660, our top model, which has an image resolution of 640 x 480 pixels, this means 307,200 pixels or using 307,200 infrared thermometers at the same time.

**Find problems faster and easier with extreme accuracy.**

It’s easy to miss critical problems with a spot IR thermometer. A FLIR thermal imaging camera scans entire components giving you instant diagnostic insights showing the full extent of problems.
Thermal imaging cameras for predictive maintenance applications

Thermal imaging has evolved into one of the most valuable diagnostic tools for Predictive Maintenance. By detecting anomalies often invisible to the naked eye, thermography allows corrective action to be taken before costly system failures occur.

Thermal imaging cameras have become compact systems that look just like a normal video camera/digital camera, are easy to use and generate a real-time high-resolution image. Numerous industries worldwide have discovered the advantage of incorporating thermal imaging cameras in their Predictive Maintenance programs.

Applications
There are an endless number of applications for thermal imaging cameras in the Predictive maintenance area.

Low voltage inspections
Thermal imaging cameras, are commonly used for electrical inspections. As electrical connections become loose, there is a resistance to current that can cause an increase in temperature. This can then cause components to fail, resulting in unplanned outages and injuries. In addition, the efficiency of an electrical grid becomes low prior to failure, thus energy is spent generating heat, causing unnecessary losses.

High voltage inspections
Power transformers are often checked with thermal imaging cameras. Temperatures of the cooling fins and the high voltage connections can be compared so that, if necessary, corrective action can be taken before real problems occur. Other high voltage installations that are checked with a thermal imaging camera include circuit breakers and switchers and high-voltage power lines. Potential problem areas will be clearly shown in the thermal image.

Mechanical
In many industries, mechanical systems serve as the backbone of operations. Thermographic data can be an invaluable source of complimentary information to vibration studies in mechanical equipment monitoring.
Infrared thermography is also a great tool for detecting faults in pipes and insulation. Heat exchangers are regularly checked with infrared to detect blocked pipes. An thermal imaging camera can quickly give an overview of the entire installation. There is no need to check each pipe individually.

A thermal camera systems provide rapid and accurate diagnoses for furnace maintenance, refractory loss management, condenser fin diagnosis, etc.

A wide range of thermal imaging cameras for predictive maintenance inspections
FLIR Systems markets a full product range of thermal imaging cameras for Predictive Maintenance applications. Whether you are just discovering the benefits that thermal imaging cameras have to offer or if you are an expert thermographer, FLIR Systems offers you the correct tool for the job.

Discover our full product range and find out why FLIR Systems is the world leader in thermal imaging cameras.
FLIR i-Series

FLIR i3/i5/i7 are the smallest, lightest and most affordable thermal imaging cameras on the market. They are incredibly easy to use and require no former experience. It really is a matter of "point-shoot-detect" to obtain high-quality thermal images that will immediately give you the thermal information you need.

**Outstanding ease-of-use**
The cameras are extremely easy to understand and operate, designed for entry-level users. The cameras are intuitive and come with a full manual.

**Fully automatic**
Produces instant, point-and-shoot JPEG thermal imagery that carries all required temperature data and can be stored internally or externally, sent and analyzed.

**Focus free**
The fixed focus free lens makes using the FLIR i3/i5/i7 a snap.

**Compact and lightweight**
FLIR i3/i5/i7 weighs only 340 g, and is easy to store in a belt pouch.

**SD card storage**
Stores images with unique ID in radiometric JPEG format, containing all temperature data on a standard miniSD card. USB file transfer to PC.

**Reporting and analysis software included**
FLIR Tools software is included and the camera is also compatible with the more powerful FLIR Reporter.

**Outstanding measurement/accuracy**
High accuracy of ±2°C or ±2% of reading produces sensitive thermal images for general purpose maintenance analysis. Measures temperatures up to +250°C and detects temperature differences as small as 0.10°C (0.15°C for FLIR i3).

**Measurement functions**
Spotmeter, box with max./min. temperatures, isotherm above/below (depending on model).

* Features dependant on camera model, please check technical specifications for more details.
Save time and money in 3 steps:

- Detect hidden problems, make quick damage assessments and perform preventive inspections
- Identify energy losses and poor insulation
- Spot electrical faults before it is too late
- Produce instant thermal images of your findings
- Create reports, analyse and document your findings with the easy-to-use software

**FLIR i-Series camera model comparison**

<table>
<thead>
<tr>
<th></th>
<th>FLIR i3</th>
<th>FLIR i5</th>
<th>FLIR i7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal image quality:</td>
<td>60x60 pixels</td>
<td>80x80 pixels</td>
<td>120x120 pixels</td>
</tr>
<tr>
<td>Field of View:</td>
<td>12.5°(H) x 12.5°(V)</td>
<td>17°(H) x 17°(V)</td>
<td>25°(H) x 25°(V)</td>
</tr>
<tr>
<td>Thermal sensitivity:</td>
<td>0.15°C Spotmeter only</td>
<td>0.10°C Spotmeter only</td>
<td>0.10°C Spotmeter, area with max./min. temperature, isotherm above/below</td>
</tr>
</tbody>
</table>
The FLIR E-Series are small and lightweight thermal imaging cameras designed for those needing higher resolution and more features and for whom documentation of findings are important.

The cameras are ideal for predictive maintenance and planned inspection of electrical and mechanical systems to ensure they operate at maximum efficiency and safety with minimal energy consumption.

Up to 320 x 240 pixels resolution
The FLIR E-Series infrared image resolution ranges from 160x120 pixels to 320x240 pixels depending on camera model. Every additional pixel means more valuable temperature information to isolate problem areas.

Small and lightweight
FLIR E-Series models weigh only 825g (battery included).

High quality visual camera
3.1 Megapixel visible light camera makes observing and inspecting faster and easier.

Thumbnail image gallery
An easy-to-access thumbnail image gallery helps you to quickly review and find your thermal images.

± 2% accuracy
High accuracy of ± 2% or ± 2 °C of reading.

LCD touch screen
Large 3.5” LCD color touch screen.

Built-in LED light
The FLIR E40 / E50 / E60 cameras have a built-in LED lamp that ensures quality visual images regardless of job site lighting levels.

Long life battery
With a 4 hour battery life its easy-to-replace Lithium Ion batteries will keep up with your demanding schedule.

Laser Pointer
A conveniently located button activates the laser pointer that will help you associate the hot or cold spot in the IR image with the real physical target in the field.

Picture-in-Picture (PiP)
With the PiP-function it is easy to locate areas of interest.

MeterLink™
FLIR MeterLink technology simplifies the work in electrical inspections by making it possible to transfer, via Bluetooth®, the data acquired by an Extech clampmeter into the thermal imaging camera. The MeterLink technology saves time and eliminates the risk of erroneous records or notes.

Wifi
Transfer images wirelessly to a smart phone (iPhone) or tablet PC (iPad).

Thermal Fusion
Merges visual and infrared images to offer better analysis.

Instant reports
Create instant reports directly in camera. Easy to copy reports to USB (FLIR E60).

Text and voice annotations
Text comments can be made from a pre-defined list or by using the touch screen. A headset can be connected to make voice annotations.

Interchangeable lenses
In order to adapt the FLIR E-Series to every situation both wide angle and tele-lenses are available.

* Features dependant on camera model, please check technical specifications for more details.
The FLIR E40 / E50 / E60 are equipped with a digital camera, a LED lamp and a laser pointer.

Connect to iPhone or iPad via Wi-Fi to Use the FLIRViewer App for processing and sharing results.

Motor: Bearing Problem.
Motor: Internal Winding Problem.
Damaged insulation.

Inspecting the transformer using the Fusion Picture-in-Picture function.
Mechanical check-up of an electrical motor using the FLIR E-Series.
Check-up of an air conditioning installation quick and easy.

FLIR E-Series camera model comparison

**FLIR E30**
- Thermal image quality: 160x120 pixels
- Thermal sensitivity: <0.1°C
- Temperature range: -20°C to +250°C
- Spotmeter: 1
- 1 box with min./max./average
- Thermal image quality: 160x120 pixels
- Thermal sensitivity: <0.07°C
- Temperature range: -20°C to +650°C
- Spotmeter: 3
- 3 boxes with min./max./average
- Delta temperature measurement
- Built-in 3.1 Mpixels digital camera
- Voice / text annotations
- MeterLink™
- Bluetooth® / WiFi
- 1-2x continuous digital zoom
- PIP IR area on visual image

**FLIR E40**
- Thermal image quality: 240x180 pixels
- Thermal sensitivity: <0.05°C
- Temperature range: -20°C to +650°C
- Spotmeter: 3
- 3 boxes with min./max./average
- Delta temperature measurement
- Built-in 3.1 Mpixels digital camera
- Voice / text annotations
- MeterLink™
- Bluetooth® / WiFi
- 1-4x continuous digital zoom
- PIP Scalable IR area on visual image
- Thermal Fusion

**FLIR E50**
- Thermal image quality: 320x240 pixels
- Thermal sensitivity: <0.05°C
- Temperature range: -20°C to +650°C
- Spotmeter: 3
- 3 boxes with min./max./average
- Delta temperature measurement
- Built-in 3.1 Mpixels digital camera
- Voice / text annotations
- MeterLink™
- Bluetooth® / WiFi
- 1-4x continuous digital zoom
- PIP Scalable IR area on visual image
- Thermal Fusion
- Instant report

**FLIR E60**
- Thermal image quality: 480x360 pixels
- Thermal sensitivity: <0.05°C
- Temperature range: -20°C to +650°C
- Spotmeter: 3
- 3 boxes with min./max./average
- Delta temperature measurement
- Built-in 3.1 Mpixels digital camera
- Voice / text annotations
- MeterLink™
- Bluetooth® / WiFi
- 1-4x continuous digital zoom
- PIP Scalable IR area on visual image
- Thermal Fusion
- Instant report
FLIR T-Series

The choice of the professional thermographer

The FLIR T-Series of portable thermal imaging cameras takes ergonomics, weight and ease-of-use to a new level. Usability is key: our engineers have translated user feedback on comfort and clarity into a series of comprehensive and innovative features. Furthermore, the FLIR T-Series has been specifically developed for industrial environments.

**Up to 320 x 240 pixel resolution**
The T-Series thermal image resolution ranges from 240 x 180 pixels to 320 x 240 pixels*.

**Camera sensitivity**
The thermal sensitivity in the FLIR T-Series ranges from 80 mK to < 50 mK*.

**High quality visual camera**
All models in the FLIR T-Series have an integrated 3.1 Mpixel digital camera. This makes observing and inspecting faster and easier.

**Measurement range**
The T-series can measure temperature between -20°C to +1200°C.

**Interchangeable infrared lenses**
The T-Series features a standard 25° lens and optional 6°, 15°, 45° and 90° lenses.

**Flexible interfaces**
The T-Series is equipped with standard video, USB outputs as well as a removable SD card.

**MPEG-4 video**
Create visual and infrared non radiometric MPEG-4 video files.

**Thermal Fusion**
Merges visual and infrared images to offer better analysis.

**Temperature sound, image alarms**
Make surveying easier and faster.

**Picture-in-Picture**
Create an infrared overlay on your visual image. Scalable, moveable and resizable.

**Text and voice annotations**
Text comments can be made from a pre-defined list or using the touch screen. A headset can be connected to make voice annotations.

**Sketch annotations**
Use the touch screen as pen and paper to add sketch annotations.

**Radiometric IR video streaming**
16 bit radiometric IR video can be streamed to a PC (via USB) running the FLIR R&D software.

**Image storage**
FLIR uses a non proprietary radiometric JPEG image format that allows for post processing and report writing with Microsoft Word® based FLIR software.

**Touch screen**
3.5" LCD touch screen plus stylus brings interactivity and user comfort to a new level.

**Measurement Modes**
Measurement spots, area with auto hot/cold spot indication, isotherms, ΔT calculation.

**MeterLink™**
FLIR MeterLink technology simplifies the work in electrical or building inspections by making it possible to transfer, via Bluetooth®, the data acquired by an Extech clampmeter or multi function moisture meter into the thermal camera. The MeterLink technology saves time and eliminates the risk of erroneous records or notes.

**Wifi**
Transfer images wirelessly to a smart phone (iPhone) or tablet PC (iPad). Connect directly to the device or via a local network.

**Copy to USB**
Transfer on board images or reports directly from the thermal imaging camera to a USB stick.

**Instant reports**
Create instant reports directly in camera, easily copy report to USB.

* Features dependant on camera model, please check technical specifications for more details.
FLIR T-Series Camera Model Comparison

<table>
<thead>
<tr>
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<th>FLIR T365</th>
<th>FLIR T425</th>
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<tr>
<td>Thermal image quality: 240x180 pixels</td>
<td>Thermal image quality: 320x240 pixels</td>
<td>Thermal image quality: 320x240 pixels</td>
<td>Thermal image quality: 320x240 pixels</td>
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<tr>
<td>Temperature range: -20°C to +350°C</td>
<td>Temperature range: -20°C to +650°C</td>
<td>Temperature range: -20°C to +650°C</td>
<td>Temperature range: -20°C to +1200°C</td>
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<tr>
<td>80 mK NETD</td>
<td>&lt; 50 mK NETD</td>
<td>&lt; 50 mK NETD</td>
<td>&lt; 50 mK NETD</td>
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<tr>
<td>2x digital zoom</td>
<td>4x digital zoom</td>
<td>4x digital zoom</td>
<td>8x digital zoom</td>
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<tr>
<td>Picture-in-Picture (scalable)</td>
<td>Picture-in-Picture (resizable/moveable)</td>
<td>Picture-in-Picture (resizable/moveable)</td>
<td>Picture-in-Picture (resizable/moveable)</td>
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<tr>
<td>1 Image marker</td>
<td>4 Image markers</td>
<td>4 Image markers</td>
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<tr>
<td>Delta T</td>
<td>Delta T</td>
<td>Audible/visible alarms</td>
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<tr>
<td>Audible/visible alarms</td>
<td>Screening Difference temperature alarm/ audible</td>
<td>Screening Difference temperature alarm/ audible</td>
<td>Screening Difference temperature alarm/ audible</td>
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<tr>
<td>Instant reports</td>
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<tr>
<td>Periodic image storage</td>
<td>Digital camera video recording</td>
<td>Digital camera video recording</td>
<td>Digital camera video recording</td>
</tr>
</tbody>
</table>
640x480 pixel resolution
The high definition 640x480 pixels detector generates crisp and clear detailed images that are easy to interpret, resulting in reliable inspections with higher accuracy.

High sensitivity
The T640 allows you to see temperature differences as small as 0.04°C.

Tilttable IR unit
The tiltable IR unit gives you great flexibility and allows you to work faster and in a comfortable position during your inspections.

Large bright 4.3 inch LCD screen
The high quality LCD screen presents sharp and bright images also in outdoor environments.

Viewfinder (FLIR T640)
The high-resolution viewfinder is ideal for outdoor use or when the LCD screen is not used.

High quality visual camera
An integrated 5 megapixel visual camera generates crisp visual images in all conditions.

Automatic- and manual focus
The FLIR T640/FLIR T620 has a manual focus on the lens as well as a quick one shot autofocus.

Laser Pointer
The position of the laser pointer is highlighted on the IR-image, which helps you associate the hot spot in the image with the physical target.

Flexible interfaces
Easy access to Digital Video Interface, USB for connecting external devices, USB2 for PC communication and a direct connection to charge the battery inside the camera.

Radiometric IR video streaming
16 bit radiometric IR video can be streamed to a PC (via USB) running the FLIR R&D software.

MPEG-4 video
Create visual and infrared non radiometric MPEG-4 video files.

FLIR Thermal Fusion
Merges visual and thermal images for better analysis.

Picture-in-picture
Create an infrared overlay on your visual image. Moveable and resizable, depending on model.

Touch screen
The LCD touch screen brings interactivity and user comfort to a new level. In combination with the large backlit buttons and joystick control the T640/T620 is very easy to use.

Sketch annotations
Include a sketch with the IR image of the inspected object, just draw it on the touch screen.

Text and voice annotations
Text comments can be selected form a list. A Bluetooth headset can be connected to make voice annotations.

Digital zoom
The FLIR T640 is equipped with a 1-8x continuous digital zoom and the T620 with a 1-4x zoom.

Wifi
Transfer images wirelessly to a smart phone (iPhone) or tablet PC (iPad), connect directly to the device or via a local network.

Connect to iPhone or iPad via Wi-Fi to Use the FLIRViewer App for processing and sharing results.
**MeterLink™**

FLIR MeterLink technology simplifies the work in electrical or building inspections by making it possible to transfer, via Bluetooth®, the data acquired by an Extech clampmeter or multifunction moisture meter into the thermal imaging camera. The MeterLink technology saves time and eliminates the risk of erroneous records or notes.

**FLIR T640 / FLIR T620 Model Comparison**

**FLIR T620**
- Thermal sensitivity: 50 mk
- LCD display only
- Measures temperatures up to +650°C
- 1-4x continuous, digital zoom

**FLIR T640**
- Thermal sensitivity: 40 mk
- Viewfinder and LCD display
- Measures temperatures up to +2,000°C
- 1-8x continuous, digital zoom
- Line profile function
- Measurement presets

Overheated connection.
FLIR P-Series

Thermal imaging cameras designed for the expert.

A FLIR P-Series camera is the perfect instrument for users who know the advantages that infrared has to offer, and who rely on an thermal imaging camera at work. Whether you are an infrared consultant or a PDM professional in the utilities - or manufacturing industry, the FLIR P-Series thermal imaging cameras will help you trace anomalies invisible to the human eye.

640x480 pixel resolution
The P-Series have a high resolution pixel detector of 640x480 pixels that allows more accuracy and shows more details at a longer distance.

High sensitivity (P660/P640)
< 30 mK thermal sensitivity captures the finest image details and temperature difference information.

High quality visual camera
An integrated 3.2 megapixel visual camera for generating crisp visual images in all conditions.

Contrast Optimizer (P660)
Automatic optimization of brightness and contrast adjustments to make it easier to make thermal analyzes of detailed objects.

Tiltable viewfinder
The high-resolution viewfinder is tiltable and can be adapted to the individual user. It is ideal for outdoor use or when the LCD screen is not used.

Large LCD screen
Super size 5.6" foldable high-quality LCD screen allows you to see the smallest details and temperature differences.

Multi-angle handle with integrated direct access buttons
A turnable control grip allows you to use the camera in the most comfortable position. The buttons and joystick to control the camera are integrated in this handle and always stay right underneath your fingertips.

Flexible interfaces
Easy access to composite video connection, USB, FireWire (P640 & P660), and a direct connection to charge the battery inside the camera.

MPEG-4 video (P640/660)
Create visual and infrared non radiometric MPEG-4 video files.

FLIR Thermal Fusion
Merges visual and infrared images to offer better analysis.

Picture-in-picture
Create an infrared overlay on your visual image. Moveable and resizable.

Radiometric JPEG
FLIR uses a non proprietary radiometric JPEG image format that allows for post processing and report writing with Microsoft Word® based FLIR software.

Text and voice annotations
Text comments can be uploaded to the camera through a wireless IrDa interface. A Bluetooth® wireless headset can be connected to make voice annotations which are stored with the image.

Automatic- and Manual focus, Digital zoom
Focus possibilities include; single shot auto focus, continuous auto focus, laser spot based (660-models) or manual focus.

Tiltable viewfinder
The high-resolution viewfinder is tiltable and can be adapted to the individual user. It is ideal for outdoor use or when the LCD screen is not used.

Large LCD screen
Super size 5.6" foldable high-quality LCD screen allows you to see the smallest details and temperature differences.

Programmable direct access buttons
For increased flexibility the operator can program buttons located on the top of the camera for direct access to favourite functions.

MeterLink™
FLIR MeterLink technology simplifies the work in electrical or building inspections by making it possible to transfer, via Bluetooth®, the data acquired by an Extech clampmeter or multifunction moisture meter into the thermal imaging camera. The MeterLink technology saves time and eliminates the risk of erroneous records or notes.

Wifi
Transfer images wirelessly to a smart phone (iPhone) or tablet PC (iPad), connect directly to the device or via a local network.
Inspections in a substation using infrared technology reveals overheated components.

Basic thermal image. Thermal image enhanced with the Contrast Optimizer function.

FLIR P-Series Camera Model Comparison

**FLIR P620**
- <40 mK sensitivity, accuracy +/- 2%
- Standard 24° or 45° lens
- 2x digital zoom
- Standard measurement functions
- Laser Pointer
- USB connection

**FLIR P640**
- <30 mK sensitivity, accuracy +/- 2%
- Wide choice of optics
- 8x digital zoom
- Extended measurement functions
- Advanced Laser Pointer
- USB and Firewire connection
- Radiometric and non-radiometric video recording
- Sequence recording in camera

**FLIR P660**
- <30 mK sensitivity, accuracy +/- 1%
- Wide choice of optics
- 8x digital zoom
- Extended measurement functions
- Advanced Laser Pointer
- USB and Firewire connection
- Radiometric and non-radiometric video recording
- Sequence recording in camera
- Built-in GPS
- Contrast Optimizer

Thermal image of a high voltage installation taken from a longer distance still allows you to see all details.

Visual image

Thermal image

Thermal Fusion image

Inspections in a substation using infrared technology reveals overheated components.
At FLIR Systems, we recognize that our job is to go beyond just producing the best possible thermal imaging camera systems. We are committed to enabling all users of our thermal imaging camera systems to work more efficiently and productively by providing them with the most professional camera-software combination.

Our team of committed specialists are constantly developing new, better and more user-friendly software packages to satisfy the most demanding thermal imaging professionals. All software is Windows-based, allows fast, detailed and accurate analysis and evaluation of thermal inspections.

FLIR Reporter
Creating compelling and professional reports

FLIR Reporter is a powerful software for creating compelling and professional reports with powerful new TripleFusion, Picture-in-Picture, and the latest Microsoft operating system and Word compatibility.

Flexible report design and layout
- Fully integrated with Microsoft Word™
- Powerful temperature analysis
- Wizard-guided report generation
- TripleFusion Picture-in-Picture (movable, sizable, scalable)
- Automatic report generation by drag-and-drop
- Predictive trending functionality
- Automatic link to Google™ Maps for images with GPS coordinates

TripleFusion Picture-in-Picture capabilities
FLIR Reporter’s Picture-in-Picture (PIP) features to make your reporting easy and efficient. Simply download infrared and visible images to Reporter. Easy-to-use dialog boxes and drag-and-drop features help you superimpose a smaller IR image inside the visible light photo.

Automatic report generation
With FLIR Reporter it’s easy to create customized reports, such as insertion of logos, etc. The ReportWizard guides you step-by-step to make a professional inspection report.

Compatible with GPS
FLIR P660 customers have built-in GPS capability with their cameras. FLIR Reporter provides an automatic link to Google™ Maps for images with GPS coordinates.

Predictive trending functionality
Trending is a powerful tool to help you track thermal information relating to your IR surveys. Armed with this information you can better determine when maintenance procedures need to be performed.

More advanced features
FLIR Reporter includes numerous advanced features, including: digital zoom, color palette changes, play back of voice comments recorded in the field. Automate calculations with the powerful formula tool and the time-saving one-click ΔT function. Instant report summary creation with the Summary Table tool. Histogram and line profile graph features to facilitate more advanced analysis.
FLIR Reporter Key features:
- Flexible report page design and layout for customized reports
- Use quick insert function to easily create custom report pages
- Fully integrated with standard Microsoft Word
- Generates reports in standard MS Office format and PDF-format
- Powerful temperature analysis
- Triple Fusion Picture-in-Picture (movable, sizable, scalable)
- Rapid report manager supporting automatic report generation by drag-and-drop
- Trending functionality
- Automatic link to Google™ Maps for images with GPS coordinates
- Automatic summary table for the report
- Fine tune images and make full temperature analysis directly in Microsoft Word
- Spell check
- Create your own formulas including measurement values from images
- Play radiometric sequences directly in the report
- Search functionality to quickly find images for your report
- Panorama tool for combining several images to a larger image
- Windows 7, 32 and 64-bit
- Support for MeterLink™ data
- *.docx compatibility

FLIR QuickPlot
FLIR QuickPlot allows the user to visualize thermal patterns, to record and store thermal image sequences, and to create time versus temperature plots for further analysis. FLIR QuickPlot is ideal for monitoring of surface temperature on devices when load conditions are changing, for example electrical cabinets and cables, power supplies, cooling devices and moving mechanics.

Software with every thermal imaging camera
FLIR Systems has since long realized the importance of making inspection reports. That is why every FLIR Systems thermal imaging camera is coming with software that allows users to organize and analyze the images from their thermal imaging cameras and present them in a report. The software allows for adjusting image settings such as color palette, level and span.

Users that want more flexibility and more analysis tools can choose for FLIR Reporter.
The Infrared Training Center (ITC) offers the world’s leading infrared training and thermographer certification programs.

Although all our cameras are designed for easy installation and operation, there is a lot more to thermal imaging than just knowing how to handle the camera. As the leading company for thermal imaging technology, we like to share our knowledge with our customers and other interested parties.

We therefore organize regular courses and seminars. We also organize in-company training on request, so that you, or your staff, can gain familiarity with thermal imaging and its applications.

The ITC not only welcomes FLIR Systems customers but also users of other brands of cameras. In fact, anyone who wants to learn more about thermal imaging for any applications, before deciding to purchase a camera, is also invited.

The mission of the ITC is to make our customers and partners successful by enhancing their knowledge of IR technology, thermal imaging products, and relevant applications. The ITC offers a portfolio of courses that presents the right mix of theoretical and practical content to help professionals quickly apply thermal imaging technology to real life applications.

All our instructors are experienced thermal imaging specialists. Not only do they have a profound theoretical knowledge but they also have practical experience with numerous applications. For our customers, this means that attending one of the ITC’s courses will give them a real hands-on learning experience.

Follow one of our courses and become a thermal imaging expert.
After Sales

FLIR After Sales

At FLIR Systems, building a relationship with a customer takes more than just selling a thermal imaging camera. After the camera has been delivered, FLIR Systems is there to help meet your needs.

Once purchased, thermal imaging cameras are vital pieces of equipment. To keep them running at all times, we operate a worldwide service network with subsidiaries in Belgium, China, France, Germany, Hong Kong, Italy, the Netherlands, Sweden, United Arab Emirates, the United Kingdom and the USA.

If there should be a problem with one of our camera systems, these local service centers have all the know-how and equipment to solve it within the shortest possible time. Local camera service gives you the assurance that your system will be ready for use again within an extremely short timeframe.

Buying a thermal imaging camera is a long-term investment. You need a reliable supplier who can provide you with support over a long period of time.

Our service personnel regularly follows training programs at our production facilities in Sweden or the USA. Not only to learn about the technical aspects of the products, but also to familiarize themselves with your individual customer requirements and the latest applications.

Different types of maintenance contracts can be offered to make sure that, whatever happens, your thermal imaging camera is always available for use.

CUSTOMER CARE is not just a slogan. We write it in capital letters at FLIR.
In today’s fast-changing environment, requirements for purchased capital equipment can change from year to year or from project to project. Things that are vital today can be redundant tomorrow.

That makes it important for the equipment in which you invest to be flexible enough to meet the ever-changing needs of your applications. No other thermal imaging camera manufacturer offers a wider range of accessories than FLIR Systems.

Hundreds of accessories are available to customize our cameras for a wide variety of imaging and measurement applications.

From a comprehensive range of lenses, through LCD screens to remote control devices, everything is available to tailor your camera to your own, specific application.

A wide variety of accessories is available for every FLIR thermal camera
FLIR i3 / i5 / i7

Technical specifications

**Camera specific**

<table>
<thead>
<tr>
<th></th>
<th>FLIR i3</th>
<th>FLIR i5</th>
<th>FLIR i7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field of view/min focus distance</td>
<td>12.5° x 12.5°/0.8 m</td>
<td>17° x 17°/0.8 m</td>
<td>25° x 25°/0.8 m</td>
</tr>
<tr>
<td>Thermal sensitivity</td>
<td>0.15°C</td>
<td>0.10°C</td>
<td>0.10°C</td>
</tr>
<tr>
<td>IR Resolution</td>
<td>60 x 60 pixels</td>
<td>80 x 80 pixels</td>
<td>120 x 120 pixels</td>
</tr>
<tr>
<td>Measurement modes</td>
<td>Center spot</td>
<td>Center spot</td>
<td>Center Spot, box with max./min. temp., isotherms above/below selected temperature interval</td>
</tr>
</tbody>
</table>

**General**

**Imaging performance**

- Spectral range: 7.5 - 13 µm
- Spatial resolution (IFOV): 3.7 mrad
- Image Frequency: 9 Hz
- Focus: Fixed
- Focal Plane Array (FPA): Uncooled microbolometer

**Image Presentation**

- Display: 2.8” color LCD

**Measurement**

- Object temperature range: -20°C to +290°C
- Accuracy: ±2 °C or ±2% of reading

**Measurement analysis**

- Emissivity correction: Variable from 0.1 to 1.0 or selected from list of materials
- Reflected apparent temperature correction: Automatic, based on input of reflected temperature

**Setup**

- Color palettes: Iron, Rainbow and Black/White
- Set-up controls: Local adaptation of units, language, date and time formats; automatic shutdown

**Image Storage**

- Type: MiniSD card
- File format: Standard JPEG - 14 bit measurement data included

**Power**

- Battery Type: Li-Ion rechargeable
- Battery operating time: 5 hours, display shows battery status
- Charging system: In camera, AC adaptor; 3 hours to 96% capacity
- AC operation: AC adaptor 90-260 VAC input
- Power management: Automatic shutdown (user selectable)
- Adaptor voltage: 5 VDC out

**Environmental specifications**

- Operating temperature range: 0°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
- Shock: 25G, IEC 60068-2-29
- Vibration: 2G, IEC 60068-2-6
- Encapsulation: Camera housing and lens: IP43

**Physical characteristics**

- Dimensions: 223 x 79 x 83 mm
- Weight: <340g, including battery
- Shipping size: 120 x 400 x 320 mm
- Shipping weight: 2.8 kg

**Standard package**

FLIR i3 or FLIR i5 or FLIR i7 thermal imaging camera, Hard transport case, FLIR Tools™ PC software CD-ROM, Printed Getting Started Guide, User documentation CD-ROM, Calibration certificate, Hand strap, Battery (inside camera), Power supply/charger with EU, UK, US and Australian plugs, USB cable, miniSD card, with SD card adaptor

*After product registration on www.flir.com
## FLIR E-Series

### Technical specifications

#### Camera specific

<table>
<thead>
<tr>
<th>Imaging Performance</th>
<th>FLIR E30</th>
<th>FLIR E40</th>
<th>FLIR E50</th>
<th>FLIR E60</th>
</tr>
</thead>
<tbody>
<tr>
<td>IR resolution</td>
<td>160 x 120 pixels</td>
<td>160 x 120 pixels</td>
<td>240 x 190 pixels</td>
<td>320 x 240 pixels</td>
</tr>
<tr>
<td>Spatial resolution</td>
<td>2.72 mrad</td>
<td>2.72 mrad</td>
<td>1.82 mrad</td>
<td>1.36 mrad</td>
</tr>
<tr>
<td>Thermal sensitivity</td>
<td>&lt; 0.1 ˚C</td>
<td>&lt; 0.07 ˚C</td>
<td>&lt; 0.05 ˚C</td>
<td>&lt; 0.05 ˚C</td>
</tr>
<tr>
<td>Zoom</td>
<td>N/A</td>
<td>1-2x continuous digital zoom</td>
<td>1-4x continuous digital zoom</td>
<td>1-4x continuous digital zoom</td>
</tr>
</tbody>
</table>

#### Image presentation

<table>
<thead>
<tr>
<th></th>
<th>FLIR E30</th>
<th>FLIR E40</th>
<th>FLIR E50</th>
<th>FLIR E60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picture in Picture</td>
<td>N/A</td>
<td>IR area on visual image</td>
<td>Scalable IR area on visual image</td>
<td>Scalable IR area on visual image</td>
</tr>
<tr>
<td>Thermal Fusion</td>
<td>N/A</td>
<td>N/A</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

#### Measurement

<table>
<thead>
<tr>
<th></th>
<th>FLIR E30</th>
<th>FLIR E40</th>
<th>FLIR E50</th>
<th>FLIR E60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Object temperature range</td>
<td>–20°C to +120 °C / 0°C to +250 °C</td>
<td>–20°C to +120 °C / 0°C to +650 °C</td>
<td>–20°C to +120 °C / 0°C to +650 °C</td>
<td>–20°C to +120 °C / 0°C to +650 °C</td>
</tr>
</tbody>
</table>

#### Measurement analysis

<table>
<thead>
<tr>
<th></th>
<th>FLIR E30</th>
<th>FLIR E40</th>
<th>FLIR E50</th>
<th>FLIR E60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spotmeter</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Area</td>
<td>1 box with min./max./average</td>
<td>3 boxes with min./max./average</td>
<td>3 boxes with min./max./average</td>
<td>3 boxes with min./max./average</td>
</tr>
<tr>
<td>Difference temperature</td>
<td>N/A</td>
<td>Delta temperature between measurement functions or reference temperature</td>
<td>Delta temperature between measurement functions or reference temperature</td>
<td>Delta temperature between measurement functions or reference temperature</td>
</tr>
</tbody>
</table>

#### Reporting

<table>
<thead>
<tr>
<th></th>
<th>FLIR E30</th>
<th>FLIR E40</th>
<th>FLIR E50</th>
<th>FLIR E60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instant report</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Yes</td>
</tr>
</tbody>
</table>

#### Digital camera

<table>
<thead>
<tr>
<th></th>
<th>FLIR E30</th>
<th>FLIR E40</th>
<th>FLIR E50</th>
<th>FLIR E60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Built-in digital camera</td>
<td>N/A</td>
<td>3.1 Mpixels, and one LED light</td>
<td>3.1 Mpixels, and one LED light</td>
<td>3.1 Mpixels, and one LED light</td>
</tr>
</tbody>
</table>

#### Image annotations

<table>
<thead>
<tr>
<th></th>
<th>FLIR E30</th>
<th>FLIR E40</th>
<th>FLIR E50</th>
<th>FLIR E60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice</td>
<td>N/A</td>
<td>60 seconds via Bluetooth®</td>
<td>60 seconds via Bluetooth®</td>
<td>60 seconds via Bluetooth®</td>
</tr>
<tr>
<td>Text</td>
<td>N/A</td>
<td>Text from predefined list or soft keyboard on touch screen</td>
<td>Text from predefined list or soft keyboard on touch screen</td>
<td>Text from predefined list or soft keyboard on touch screen</td>
</tr>
<tr>
<td>MeterLink</td>
<td>N/A</td>
<td>Possible to connect, via Bluetooth, Extech Moisture meter MO297 or Extech clamp meter EX845</td>
<td>Possible to connect, via Bluetooth, Extech Moisture meter MO297 or Extech clamp meter EX845</td>
<td>Possible to connect, via Bluetooth, Extech Moisture meter MO297 or Extech clamp meter EX845</td>
</tr>
</tbody>
</table>

#### Image storage

<table>
<thead>
<tr>
<th></th>
<th>FLIR E30</th>
<th>FLIR E40</th>
<th>FLIR E50</th>
<th>FLIR E60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>IR images</td>
<td>IR/visual images; simultaneous storage of visual and IR images</td>
<td>IR/visual images; simultaneous storage of visual and IR images</td>
<td>IR/visual images; simultaneous storage of visual and IR images</td>
</tr>
</tbody>
</table>

#### Data communication interfaces

<table>
<thead>
<tr>
<th></th>
<th>FLIR E30</th>
<th>FLIR E40</th>
<th>FLIR E50</th>
<th>FLIR E60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bluetooth®, WiFi</td>
<td>N/A</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
**General**

**Imaging Performance**
- **FOV / Minimum focus distance**: 25° × 19° / 0.4 m
- **Spectral range**: 7.5–13 µm
- **Image frequency**: 60 Hz
- **Focus**: Manual
- **Focal Plane Array (FPA)**: Uncooled microbolometer

**Image presentation**
- **Display**: Built-in 3.5" LCD touch screen, 320 × 240 pixels
- **Image modes**: IR image, thumbnail gallery

**Measurement**
- **Accuracy**: ±2 °C or ±2% of reading

**Measurement analysis**
- **Automatic hot/cold detection**: Auto hot or cold spotmeter markers within area
- **Emissivity correction**: Variable from 0.01 to 1.0 or selected from list of materials
- **Measurement corrections**: Reflected temperature, optics transmission and atmospheric transmission
- **Isotherm**: Detect high/low temperature/interval

**Set-up**
- **Image controls**: Palettes (Arctic, Gray, Iron, Lava, Rainbow and Rainbow HC), image adjustment (auto/manual)
- **Set-up controls**: Local adaptation of units, language, date and time formats; automatic shutdown, display intensity

**Image storage**
- **Format**: Standard JPEG - including measurement data on SD memory card

**Laser pointer**
- **Laser**: Position is displayed on the IR image

**Power**
- **Battery type**: Lithium-Ion (field replaceable) - 4 hours operating time
- **Charging system**: In camera, AC adaptor, 2-bay charger or 12 V from a vehicle
- **Power management**: Automatic shutdown (user selectable)
- **AC operation**: AC adaptor, 90-260 V AC
- **Adaptor voltage**: 12 V output to camera

**Environmental specifications**
- **Operating temperature range**: -15 to +50 °C
- **Storage temperature range**: -40 to +70 °C
- **Humidity**: IEC 60068-2-30/24 h 95% relative humidity +25 °C to +40 °C / 2 cycles
- **Shock / Vibration**: 25 g (IEC 60068-2-29) / 2 g (IEC 60068-2-6)
- **Encapsulation**: IP 54 (IEC 60529)

**Data communication interfaces**
- **Interfaces**: USB-mini, USB-A, Composite video
- **USB**: USB-A: Connect external USB device - USB-mini-B: Data transfer to and from PC / Streaming MPEG 4

**Physical characteristics**
- **Camera weight, incl. battery**: 0.825 kg
- **Camera size (L × W × H)**: 246 × 97 × 184 mm
- **Shipping size**: 560 × 370 × 190 mm
- **Shipping weight**: 5.3 kg

**Standard package**

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*After product registration on www.flir.com*
# FLIR T-Series

## Technical specifications

### Camera specific

<table>
<thead>
<tr>
<th></th>
<th>FLIR T250</th>
<th>FLIR T335</th>
<th>FLIR T365</th>
<th>FLIR T425</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Imaging performance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal sensitivity/NETD</td>
<td>80 mK at 30°C</td>
<td>50 mK at 30°C</td>
<td>50 mK at 30°C</td>
<td>50 mK at 30°C</td>
</tr>
<tr>
<td>IR resolution</td>
<td>240 x 180 pixels</td>
<td>320 x 240 pixels</td>
<td>320 x 240 pixels</td>
<td>320 x 240 pixels</td>
</tr>
<tr>
<td>Zoom</td>
<td>1–2× continuous, digital zoom, including panning</td>
<td>1–4× continuous, digital zoom, including panning</td>
<td>1–4× continuous, digital zoom, including panning</td>
<td>1–8× continuous, digital zoom, including panning</td>
</tr>
<tr>
<td><strong>Image presentation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Image modes</td>
<td>General</td>
<td>General</td>
<td>General + Thermal Fusion</td>
<td>General + Thermal Fusion</td>
</tr>
<tr>
<td>Thermal Fusion</td>
<td>N/A</td>
<td>N/A</td>
<td>IR image shown within temp interval on visual image</td>
<td>IR image shown above, below or within temp interval on visual image</td>
</tr>
<tr>
<td>Picture in Picture</td>
<td>Scalable IR area on visual image</td>
<td>Resizable and movable IR area on visual image</td>
<td>Resizable and movable IR area on visual image</td>
<td>Resizable and movable IR area on visual image</td>
</tr>
<tr>
<td><strong>Measurement</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Object temperature range</td>
<td>–20°C to +350°C in 2 ranges: -20°C to +120°C or 0°C to +350°C</td>
<td>–20°C to +650°C in 3 ranges: -20°C to +120°C or 0°C to +350°C or +200°C to +650°C</td>
<td>–20°C to +1200°C in 3 ranges: -20°C to +120°C or 0°C to +350°C or +200°C to +1200°C</td>
<td>–20°C to +1200°C in 3 ranges: -20°C to +120°C or 0°C to +350°C or +200°C to +1200°C</td>
</tr>
<tr>
<td><strong>Measurement analysis</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difference temperature</td>
<td>N/A</td>
<td>Delta temperature between measurement functions or reference temperature</td>
<td>Delta temperature between measurement functions or reference temperature</td>
<td>Delta temperature between measurement functions or reference temperature</td>
</tr>
<tr>
<td>Measurement function alarm</td>
<td>N/A</td>
<td>N/A</td>
<td>Audible/visual alarm (above/below) on spotmeter, box or difference temperature</td>
<td>Audible/visual alarm (above/below) on spotmeter, box or difference temperature</td>
</tr>
<tr>
<td><strong>Set-up</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color palettes</td>
<td>General</td>
<td>General + RainHC, Bluered</td>
<td>General</td>
<td>General + RainHC, Bluered</td>
</tr>
<tr>
<td>Image storage</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Every 10 seconds up to 24 hours</td>
</tr>
<tr>
<td><strong>Image annotations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voice</td>
<td>60 seconds</td>
<td>60 seconds</td>
<td>60 seconds</td>
<td>60 seconds via Bluetooth®</td>
</tr>
<tr>
<td>Image marker</td>
<td>On IR or visual image</td>
<td>4 on IR or visual image</td>
<td>4 on IR or visual image</td>
<td>4 on IR or visual image</td>
</tr>
<tr>
<td><strong>Digital camera</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital camera video recording</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Video clip to memory card</td>
</tr>
<tr>
<td><strong>Report generation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instant report</td>
<td>N/A</td>
<td>.pdf file in camera including thermal and visual image</td>
<td>.pdf file in camera including thermal and visual image</td>
<td>.pdf file in camera including thermal and visual image</td>
</tr>
</tbody>
</table>
## Imaging Performance

- **Field of view (FOV) / Minimum focus distance**: 25° × 19° / 0.4 m
- **Spectral range**: 7.5 - 13 µm
- **Spatial resolution (IFOV)**: 1.82 mrad for T250 - 1.36 mrad for T335, T365, T425
- **Image frequency**: 9 Hz or 30 Hz
- **Focus**: Automatic or manual
- **Focal Plane Array (FPA)**: Uncooled microbolometer

## Image presentation

- **Display**: Built-in touch screen, 3.5” color LCD, 320 x 240 pixels
- **Image modes**: IR image, Visual image, Picture in Picture, Thumbnail gallery

## Measurement

- **Accuracy**: ±2°C or ±2% of reading

## Measurement analysis

- **Spotmeter**: 5
- **Area**: 5 boxes with max/min/average
- **Isotherm**: Detect high/low temperature/interval
- **Automatic hot / cold detection**: Auto hot or cold spotmeter markers within area
- **Emissivity correction**: Variable from 0.01 to 1.0 or selected from list of materials
- **Measurement corrections**: Reflected temperature, optics transmission and atmospheric transmission
- **External optics/windows correction**: Automatic, based on inputs of optics/window transmission and temperature

## Setup

- **Color palettes**: BW, BW inv, Iron, Rain, T335 / T425: Rain HC, Bluered
- **Set-up controls**: Local adaptation of units, language, date and time formats; automatic shutdown, display intensity

## Image storage

- **Type**: SD memory card
- **Format**: Standard JPEG - including measurement data
- **Modes**: IR/visual images, simultaneous storage of IR and visual images

## Image annotations

- **Text**: Text from predefined list or soft keyboard on touch screen
- **MeterLink**: Connect Extech Clamp Meter EX845 or Moisture Meter MO297 via Bluetooth
- **Sketch**: From touch screen

## Digital camera

- **Built-in digital camera**: 3.1 Mpixel (2048 x 1536 pixels), and LED light

## Laser Pointer

- **Laser**: Semiconductor AlGalnP diode laser, Class 2
- **Laser alignment**: Position is displayed automatically on the IR image

## Video streaming

- **Radiometric IR video streaming**: Full dynamic to PC using USB
- **Non-radiometric IR video streaming**: MPEG-4 to PC using USB

## Power System

- **Battery time**: Rechargeable Lithium-ion battery, field replaceable
- **Battery operating time**: 4 hours
- **Charging system**: In camera, AC adaptor, 2-bay charger or 12 V from a vehicle
- **Power management**: Automatic shutdown (user selectable)
- **AC operation**: AC adaptor, 90-260 V AC
- **Adaptor voltage**: 12 Volt VDC out

## Environmental specifications

- **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
- **Shock**: 25 g (IEC 60068-2-29)
- **Vibration**: 2 g (IEC 60068-2-6)
- **Encapsulation**: Camera housing and lens: IP 54 (IEC 60529)

## Interfaces

- **USB-A**: Connect external USB device (copy to memory stick)
- **USB Mini-B**: Data transfer to and from PC/streaming
- **Composite video**: PAL or NTSC
- **WiFi**: Connects directly to pad/iPhone for image transfer or via local network

## Physical characteristics

- **Camera weight, incl. battery**: 0.88 kg
- **Camera size (L × W × H)**: 106 × 201 × 125 mm
- **Shipping size**: 180 x 500 x 360 mm
- **Shipping weight**: 5.6 kg

## Standard package

FLIR T250, FLIR T335, FLIR T365 or FLIR T425: Hard transport case, Thermal imaging camera with lens, Battery, Battery charger, Bluetooth® USB micro adapter, Calibration certificate, FLIR Tools™ PC software CD-ROM, Headset, Memory card with adaptor, Power supply incl. multi-plugs, Printed Getting Started Guide, Sunshield, USB cable, User documentation CD-ROM, Video cable, Warranty extension card or Registration card
## Technical specifications

### Camera specific

<table>
<thead>
<tr>
<th>FLIR T620</th>
<th>FLIR T640</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Imaging performance</strong></td>
<td></td>
</tr>
<tr>
<td>Field of View (FOV) / minimum focus distance</td>
<td>25° x 19° / 0.25 m</td>
</tr>
<tr>
<td></td>
<td>15° x 11° / 0.5 m</td>
</tr>
<tr>
<td></td>
<td>45° x 34° / 0.15 m</td>
</tr>
<tr>
<td>Lens needs to be specified when ordering</td>
<td>lens needs to be specified when ordering</td>
</tr>
<tr>
<td>Spatial resolution</td>
<td>0.68 mrad for 25° lens</td>
</tr>
<tr>
<td></td>
<td>0.41 mrad for 15° lens</td>
</tr>
<tr>
<td></td>
<td>1.23 mrad for 45° lens</td>
</tr>
<tr>
<td>Thermal sensitivity (at 30 °C)</td>
<td>50 mK @ 30 °C</td>
</tr>
<tr>
<td>Digital zoom</td>
<td>Direct access, 1-4x continuous</td>
</tr>
<tr>
<td><strong>Image presentation</strong></td>
<td></td>
</tr>
<tr>
<td>Viewfinder</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Measurement</strong></td>
<td></td>
</tr>
<tr>
<td>Temperature range, standard</td>
<td>-40 °C to +150 °C</td>
</tr>
<tr>
<td></td>
<td>+100 °C to +650 °C</td>
</tr>
<tr>
<td>Temperature range, optional</td>
<td>+300 °C to +2,000 °C</td>
</tr>
<tr>
<td><strong>Measurement analysis</strong></td>
<td></td>
</tr>
<tr>
<td>Line profile function</td>
<td>N/A</td>
</tr>
<tr>
<td>Measurement presets</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### General

| **Imaging performance** | | |
| Resolution | 640x480 pixels | |
| Focal Plane array (FPA) | Uncooled microbolometer 640x480 pixels, latest generation with 17 µm pitch | |
| Spectral range | 7.8 to 14 µm | |
| Image frequency | 30 Hz | |
| Focus | Manual / autofocus | |
| **Image presentation** | | |
| Display | 4.3” superbright touchscreen LCD 800x480 pixels | |
| Image modes | IR-image with selected color scale, Full color visual, Picture in Picture (Resizable and movable IR-area), Thermal Fusion (Threshold above, below and interval), thumbnail gallery | |
| Manual image adjustments | Level/span/max/min | |
| Automatic image adjustments, continuous or manual activation | Standard or based on histogram from image content | |
| Automatic image adjustment with locked scale | Lock max, min or span | |
| **Measurement** | | |
| Accuracy | ± 2 °C or ± 2% of reading | |
General

Measurement analysis
- Spotmeter
- Area: 5 Max/Min/Average value within box or circle
- Automatic hot/cold detection: Max/Min temp. value and position shown within box, circle or on a line
- Isotherm: Detect high/low temperature/interval
- Difference temperature: Difference between any two measurement functions or any measurement function and a reference temperature
- Reference temperature function: Manually set
- Emissivity correction: Variable from 0.01 to 1.0 or selected from materials list
- Measurement corrections: Reflected temperature, optics transmission and atmospheric transmission
- External windows correction: Automatic based on inputs of window temperature and transmission

Set-up
- Image controls: Palettes (Arctic, Gray, Iron, Lava, Rainbow and Rainbow HC), image adjustment (auto/manual)
- Set-up controls: Local adaptation of units, language, date and time formats; automatic shutdown, display intensity
- Configure information to be shown in image
- Programmable button

Image storage
- Type: IR/visual images; simultaneous storage of visual and IR images
- Format: Standard JPEG - including measurement data on SD memory card

Digital camera
- Built-in digital camera: 5 Mpixel incl. lamps

Laser LocatIR
- Laser: Semiconductor AlGaInP diode laser, Class 2 - position is displayed on the IR image
- Laser alignment: Laser position shown on IR-image

Image annotation
- Voice: 60 seconds via Bluetooth®
- Text: Text from predefined list or soft keyboard on touch screen
- Sketch: A sketch drawn on touch screen is automatically saved with image
- Meterlink: Wireless connection to: Extech Moisture meter MO297 or Extech clamp meter EX845

Report generation
- Instant Report in camera: Automatic generation of PDF report based on selected images direct in camera

Video streaming/recording
- Radiometric IR video streaming: Full dynamic to PC using USB
- Non radiometric IR-video streaming: MPEG 4 streaming to PC using USB
- Video recording in camera: Non-radiometric IR video/visual video, MPEG4 to SD-card.
- WiFi: Wireless streaming of non-radiometric IR-video, MPEG4

Update of camera
- Automatic update of camera to latest version: Automatic update of camera from PC running FLIR Tools

Data communication interfaces
- Interfaces: USB-mini, USB-A, Bluetooth®, WiFi, DVI video
- USB: USB-A: Connect external USB device - USB-mini-B: Data transfer to and from PC / Streaming MPEG 4
- WiFi: Connects directly to Ipad/Iphone for image transfer or via local network

Power
- Battery type: Lithium-Ion (field replaceable)
- Battery operating time: > 2.5 hours at 25°
- Charging system: In camera, AC adaptor, 2-bay charger or 12 V from a vehicle
- Power management: Automatic shutdown and sleep mode (user selectable)
- AG operation: AC adaptor, 90-260 V AC, 50/60 Hz
- Adaptor voltage: 12 Volt VDC out

Environmental specifications
- Operating temperature range: -15 to +50 °C
- Storage temperature range: -40 °C to +70 °C
- Humidity, operating and storage, non-condensing: IEC 60068-2-30/24 h, 95% relative humidity +25 °C to +40 °C
- Encapsulation: IP 54, IEC 60529
- Bump, Operational: 25G, IEC 60068-2-29
- Vibration, Operational: 2G, IEC 60068-2-6
- EMC, emission: EN 61000-6-3
- EMC, immunity: EN 61000-6-2

Physical characteristics
- Camera weight incl. battery: 1.3 kg
- Camera size (L x W x H): 143 x 195 x 95 mm
- Tripod Mounting: 1/4" - 20

Lenses optional
- Tele lens, 15°: 15° x 11° / 0.9 m
- Wide angle lens 45°: 45° x 34° / 0.1 m

Standard package
FLIR T620 / T640: Hard transport case, thermal imaging camera with lens, Battery (2), Battery charger, Large eyecap, Tripod adaptor, Neck strap, Lens cap, Bluetooth® headset, Calibration certificate, FLIR Tools™ PC software CD-ROM, Memory card with adaptor, Power supply incl. multiplugs, Printed Getting Started Guide, Printed Important Information Guide, USB cable, User documentation CD-ROM, HDMI cable (2), Warranty extension card or Registration card
## FLIR P-series

### Technical specifications

#### Camera specific

<table>
<thead>
<tr>
<th>Imaging performance</th>
<th>FLIR P620</th>
<th>FLIR P640</th>
<th>FLIR P660</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field of View (FOV) / minimum focus distance</td>
<td>24° x 18° / 0.3 m</td>
<td>12° x 9° / 1.2 m</td>
<td>24° x 18° / 0.3 m</td>
</tr>
<tr>
<td></td>
<td>45° x 34° / 0.2 m</td>
<td>24° x 18° / 0.3 m</td>
<td>45° x 34° / 0.2 m</td>
</tr>
<tr>
<td>lens needs to be specified when ordering</td>
<td>45° x 34° / 0.2 m</td>
<td>lens needs to be specified when ordering</td>
<td>45° x 34° / 0.2 m</td>
</tr>
<tr>
<td>Spatial resolution</td>
<td>0.65 mrad for 24° lens</td>
<td>0.65 mrad for 24° lens</td>
<td>0.65 mrad for 24° lens</td>
</tr>
<tr>
<td></td>
<td>1.3 mrad for 45° lens</td>
<td>1.3 mrad for 45° lens</td>
<td>1.3 mrad for 45° lens</td>
</tr>
<tr>
<td>Thermal sensitivity</td>
<td>40 mK at 30°C</td>
<td>30 mK at 30°C</td>
<td>30 mK at 30°C</td>
</tr>
<tr>
<td>Electronic zoom</td>
<td>1-2x continuous including pan function</td>
<td>1-8x continuous including pan function</td>
<td>1-8x continuous including pan function</td>
</tr>
<tr>
<td>Electric and manual focus</td>
<td>Auto and manual</td>
<td>Auto and manual</td>
<td>Auto (follows laser spot) and manual</td>
</tr>
<tr>
<td>with USM technology</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Image presentation</th>
<th>N/A</th>
<th>N/A</th>
<th>Adjustable DDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic contrast optimization</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Thermal Fusion</td>
<td>IR image shown above, below or within temperature interval on the visual image (with 24° lens only)</td>
<td>IR image shown above, below or within temperature interval on the visual image (with 24° lens only)</td>
<td>IR image shown above, below or within temperature interval on the visual image (with 24° lens only)</td>
</tr>
<tr>
<td>Picture in Picture</td>
<td>Resizable and moveable IR area on visual image (with 24° lens only)</td>
<td>Resizable and moveable IR area on visual image (with 24° lens only)</td>
<td>Resizable and moveable IR area on visual image (with 24° lens only)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measurement</th>
<th>± 2 °C or ± 2% of reading</th>
<th>± 2 °C or ± 2% of reading</th>
<th>± 1°C or ± 1% of reading (restricted range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>± 2 °C or ± 2% of reading</td>
<td>± 2 °C or ± 2% of reading</td>
<td>± 2 °C or ± 2% of reading</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measurement analysis</th>
<th>3 boxes or circles with Max./Min./Average</th>
<th>5 boxes or circles with Max./Min./Average</th>
<th>5 boxes or circles with Max./Min./Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>3 boxes or circles</td>
<td>5 boxes or circles</td>
<td>5 boxes or circles</td>
</tr>
<tr>
<td>Measurement function alarm</td>
<td>N/A</td>
<td>Audible/visual alarms (above/below) on any selected measurement function</td>
<td>Audible/visual alarms (above/below) on any selected measurement function</td>
</tr>
<tr>
<td>Profile</td>
<td>1 live line, horizontal or vertical</td>
<td>1 live line, horizontal or vertical</td>
<td>1 live line, horizontal or vertical</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Image storage</th>
<th>N/A</th>
<th>Built-in RAM for burst recording</th>
<th>Built-in RAM for burst recording</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-camera storage</td>
<td>N/A</td>
<td>Built-in RAM for burst recording</td>
<td>Built-in RAM for burst recording</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Laser pointer</th>
<th>N/A</th>
<th>Position is automatically displayed on IR image</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laser alignment</td>
<td>N/A</td>
<td>Auto-focus / level / spotmeter</td>
<td>N/A</td>
</tr>
<tr>
<td>Laser mode</td>
<td>N/A</td>
<td>Auto-focus / level / spotmeter</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Video recording</th>
<th>N/A</th>
<th>Real-time to built-in RAM, transferrable to memory card</th>
<th>Real-time to built-in RAM, transferrable to memory card</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiometric IR video recording</td>
<td>N/A</td>
<td>Real-time to built-in RAM, transferrable to memory card</td>
<td>Real-time to built-in RAM, transferrable to memory card</td>
</tr>
<tr>
<td>Non-radiometric video recording</td>
<td>N/A</td>
<td>Real-time to built-in RAM, transferrable to memory card</td>
<td>Real-time to built-in RAM, transferrable to memory card</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic Information System</th>
<th>N/A</th>
<th>Location data automatically added to every image for referencing on WEB maps</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Built-in GPS</td>
<td>N/A</td>
<td>Location data automatically added to every image for referencing on WEB maps</td>
<td>N/A</td>
</tr>
</tbody>
</table>

* *After product registration on www.flir.com*
### Imaging Performance

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>IR resolution</td>
<td>640 x 480 pixels</td>
</tr>
<tr>
<td>Spectral range</td>
<td>7.5 - 13 µm</td>
</tr>
<tr>
<td>Image frequency</td>
<td>30 Hz</td>
</tr>
<tr>
<td>Focus</td>
<td>Automatic or manual</td>
</tr>
<tr>
<td>Focal Plane Array (FPA)</td>
<td>Uncooled microbolometer</td>
</tr>
</tbody>
</table>

### Image presentation

<table>
<thead>
<tr>
<th>Display</th>
<th>Built-in Widescreen, 5.6” color LCD, 1024 x 600 pixels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viewfinder</td>
<td>Built-in, tiltable LCD, 800 x 600 pixels</td>
</tr>
<tr>
<td>Automatic image adjustments</td>
<td>Continuous/manual; linear or histogram based</td>
</tr>
<tr>
<td>Manual image adjustments</td>
<td>Level/span/max./min.</td>
</tr>
<tr>
<td>Image modes</td>
<td>IR image, Visual image, Thumbnail gallery, Thermal Fusion, Picture in Picture</td>
</tr>
<tr>
<td>Reference image</td>
<td>Shown together with live IR image</td>
</tr>
</tbody>
</table>

### Measurement

| Temperature range     | -40°C to +50°C (optional up to +2000°C) |

### Measurement analysis

| Isotherm              | 2 with above/below interval             |
| Automatic hot / cold detection | Max/Min. temp. value and position shown within box, circle or on a line |
| Reference temperature | Manually set or captured from any measurement function |
| Emissivity correction | Variable from 0.01 to 1.0 or selected from list of materials |
| Measurement corrections | Reflected temperature, optics transmission, atmospheric transmission |
| External optics/windows correction | Automatic, based on inputs of optics/window transmission and temperature |

### Setup

| Programmable buttons | 2                                           |

### Image storage

<table>
<thead>
<tr>
<th>Type</th>
<th>SD memory card</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format</td>
<td>Standard JPEG - including measurement data</td>
</tr>
<tr>
<td>Modes</td>
<td>IR/Visual images, simultaneous storage of IR and visual images, visual image is automatically associated with corresponding IR image</td>
</tr>
<tr>
<td>Periodic image storage</td>
<td>Every 10 seconds up to 24 hours</td>
</tr>
</tbody>
</table>

### Image annotations

<table>
<thead>
<tr>
<th>Voice</th>
<th>80 seconds via Bluetooth®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text</td>
<td>Predefined text or free text from PDA (via IrDA) stored with the image</td>
</tr>
<tr>
<td>Image marker</td>
<td>4 on IR or visual image</td>
</tr>
<tr>
<td>External sensors</td>
<td>Possible to connect: Extech Moisture meter MD297 or Extech clamp meter EX845</td>
</tr>
</tbody>
</table>

### Digital camera

| Built-in digital camera | 3.2 Mpixel auto-focus with video lamp |

### Laser Pointer

| Laser                  | Semiconductor AlGalnP diode laser, Class 2 |

### Power System

<table>
<thead>
<tr>
<th>Battery time</th>
<th>Rechargeable Lithium-ion battery, field replaceable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charging system</td>
<td>In camera, AC adapter, 2-bay charger or 12 V from a vehicle</td>
</tr>
<tr>
<td>Power management</td>
<td>Automatic shutdown and sleep mode (user selectable)</td>
</tr>
<tr>
<td>AC operation</td>
<td>AC adapter, 90-260 V AC, 50/60 Hz</td>
</tr>
<tr>
<td>Adaptor voltage</td>
<td>12 VDC out</td>
</tr>
</tbody>
</table>

### Environmental specifications

| Operating temperature range | -15 °C to +50 °C |
| Storage temperature range   | -40 °C to +70 °C |
| Humidity (operating and storage) | IEC 68-2-30/24 h 95% relative humidity +25 °C to +40 °C |
| Shock                      | 25 g (IEC 60068-2-29) |
| Vibration                  | 2 g (IEC 60068-2-6) |
| Encapsulation              | IP 54 (IEC 60529) |

### Interfaces

<table>
<thead>
<tr>
<th>USB-A</th>
<th>Connect external USB device (copy to memory stick)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB-Mini-B</td>
<td>Data transfer to and from PC / streaming MPEG-4</td>
</tr>
<tr>
<td>Composite video</td>
<td>PAL or NTSC</td>
</tr>
<tr>
<td>IrDA</td>
<td>For sending text comment files from PDA to camera, wireless transfer of text</td>
</tr>
<tr>
<td>WLAN</td>
<td>Optional</td>
</tr>
<tr>
<td>Headset connection</td>
<td>Yes</td>
</tr>
<tr>
<td>WiFi</td>
<td>Connects directly to Ipad/Iphone for image transfer or via local network</td>
</tr>
</tbody>
</table>

### Physical characteristics

| Camera weight, incl. battery | 1.8 kg |
| Camera size (L x W x H)      | 299 x 144 x 147 mm |
| Shipping size                | 520 x 400 x 200 mm |
| Shipping weight              | 8.2 kg |

### Standard package

FLIR P620, FLIR P640 or FLIR P660: Hard transport case, Thermal imaging camera with lens, Battery (2 ea., one inserted in camera, one outside camera), Battery charger, Calibration certificate, FLIR Tools™ PC software CD-ROM, FireWire cable, 1/4 (FLIR P640 and P660 only), FireWire cable, 6/6 (FLIR P640 and P660 only), Bluetooth® USB micro adapter, Lens cap (mounted on lens), Lens cap (2 ea.), Power supply incl. multi-plugs, Memory card-to-USB adaptor, Memory card with adaptor, Printed Getting Started Guide, Printed Important Information Guide, Shoulder strap, USB cable, User documentation CD-ROM, Video cable, Warranty extension card or Registration card
FLIR i3 / i5 / i7

Accessories

Power

Battery
Extra battery that will allow you to spend extra time in the field doing inspections.

Power supply incl. Multi-plugs
This power supply is used when powering the camera from the mains supply or to charge the batteries. It comes with different types of plugs.

Accessories

Hard transport case
Rugged, watertight plastic shipping case. Holds all items securely. The case can be locked with padlocks and features a breather valve to prevent pressure build-up in airplane cargo holds.

Pouch
Soft pouch to protect the camera. Possible to attach to waist belt.

FLIR E-Series

Accessories

Power

Cigarette lighter adaptor kit, 12 V DC, 1.2 m
Can be used to power the camera from the cigarette lighter socket in a car.

Battery
High capacity battery for the IR camera.

Battery charger
Stand-alone 2-bay battery charger, including power supply with multi-plugs.

Power supply incl. Multi-plugs
This power supply is used when powering the camera from the mains supply or to charge the batteries. It comes with different types of plugs.
Storage

Memory card micro-SD with adaptors
Capture images on the go with your camera. These small cards are easy to use and can hold a great amount of data.

Miscellaneous

USB cable Std-A <-> Mini-B
USB cable to connect the camera.

Video cable
This cable can be used to transfer the images of the E-Series thermal imaging cameras to a monitor.

Tripod adapter
Tripod adapter, necessary to be able to mount the camera on a tripod.

Bluetooth headset
The Bluetooth headset can be used for annotation thermal images with voice messages. There is a wireless connection between the camera and the headset.

Hard transport case
Rugged, watertight plastic shipping case. Holds all items securely. The case can be locked with padlocks and features a breather valve to prevent pressure build-up in airplane cargo holds.

Extech Clamp meter EX845
Can be connected to the thermal imaging camera through MeterLink™

Extech Moisture meter MO297
Can be connected to the thermal imaging camera through MeterLink™

Lenses

Lens 10 mm, 45° field of view incl. case
Sometimes there isn’t enough room to step back and see the whole picture. This wide angle lens has a field of view almost double than the one of the standard 25° lens. Perfect for wide or tall targets such as electrical panels or paper machinery.

Lens 30 mm, 15° field of view, incl. case
When the target in question is a distance away it may be useful to use a telescope lens. The 15° lens is a popular lens accessory and provides almost 2X magnification compared to the 25° lens. Ideal for small or distant targets such as overhead power lines.
FLIR T-Series

Accessories

Power

**Battery**
Extra battery that will allow you to spend extra time in the field doing inspections.

**2-bay battery charger, incl. power supply with multi-plugs**
This 2 bay battery charger is used for charging FLIR Systems’ camera batteries.

**Cigarette lighter adaptor kit, 12 V DC, 1.2 m**
Can be used to power the camera from the cigarette lighter socket in a car.

**Power supply incl. Multi-plugs**
Combined power supply, including multi plugs and battery charger to charge the battery when it is inside or outside of the camera.

Storage

**Memory card micro-SD with adaptors**
Capture images on the go with your camera. These small cards are easy to use and can hold a great amount of data.

**Adaptor, SD memory card to USB**
Allows to transfer the images from the SD card to a PC.

Miscellaneous

**Hard transport case**
Rugged, watertight plastic shipping case. Holds all items securely. The case can be locked with padlocks and features a breather valve to prevent pressure build-up in airplane cargo holds.

**Neck strap**
Ties the camera around your neck so that it is protected against falling.

**Pouch**
Soft pouch to protect the camera.

**Sun shield**
Snap-on sunshield to increase visibility of the LCD display.

**Extech Clamp meter EX845**
Can be connected to the thermal imaging camera through MeterLink™

**Extech Moisture meter MO297**
Can be connected to the thermal imaging camera through MeterLink™
Lenses

**Lens 10 mm, 45° field of view incl. case**
Sometimes there isn't enough room to step back and see the whole picture. This wide angle lens has a field of view almost double than the one of the standard 25° lens. Perfect for wide or tall targets such as electrical panels or paper machinery.

**Lens 30 mm, 15° field of view, incl. case**
When the target in question is a distance away it may be useful to use a telescope lens. The 15° lens is a popular lens accessory and provides almost 2X magnification compared to the 25° lens. Ideal for small or distant targets such as overhead power lines.

**Lens 76 mm, 6° field of view, incl. case and mounting support**
For maximum magnification, the 6° lens is the only choice. This optic provides almost 3.5X magnification compared to the 25° lens and is ideally suited for inspection of overhead power lines. Due to the weight of this lens, a tripod is recommended.

**Lens 4 mm, 90° field of view, incl. case and mounting support**
Sometimes there isn't enough room to step back and see the whole picture. This wide angle lens has a field of view almost four times the one of the standard 25° lens. This wide angle lens is perfect for wide or tall targets such as electrical panels or paper machinery.

Cables

**Video cable**
This cable can be used to transfer the images of the T/B-Series thermal imaging cameras to a monitor.

Extended measurement ranges

**High temperature option to +1,200°C**
Allow to measure temperatures of up to +1,200°C with the camera.

Headsets

**Bluetooth® headset**
Headset with Bluetooth® for wireless connection with the thermal imaging camera, including microphone.

**Bluetooth® USB micro adaptor**
Bluetooth® USB micro adaptor for wireless connection between the thermal imaging camera and external Bluetooth® equipment.
FLIR T620 / FLIR T640

Accessories

Power

**Cigarette lighter adaptor kit, 12 V DC, 1.2 m** [1910490]
Can be used to power the camera from the cigarette lighter socket in a car.

**2-bay battery charger, incl. power supply with multi-plugs** [T197865]
This 2 bay battery charger is used for charging FLIR Systems’ camera batteries.

**Battery** [T197722]
Extra battery that will allow you to spend extra time in the field doing inspections.

**Power supply incl. Multi-plugs** [T910814]
This power supply is used when powering the camera from the mains supply or to charge the batteries. It comes with different types of plugs.

Storage

**Memory card micro-SD with adaptors** [T910737]
Capture images on the go with your camera. These small cards are easy to use and can hold a great amount of data.

Cables

**USB cable Std-A <-> Mini-B** [1910423]
USB cable to connect the camera with a computer, using the USB protocol.

**HDMI to DVI cable, 1.5 m** [T910930]
Can be used to show the high resolution images of the camera on a screen with DVI input.

**HDMI to HDMI cable, 1.5 m** [T910891]
Can be used to show the high resolution images of the camera on a screen with HDMI input.

Headsets

**Bluetooth® headset** [T197771]
Headset with Bluetooth® for wireless connection with the thermal imaging camera, including microphone.

Extended measurement ranges

**High temperature option +300ºC up to +2,000ºC** [T197896]
Allow to measure temperatures of up to +2,000ºC with the camera.
Lenses

**Lens 13.1 mm, 45° field of view incl. case**
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.

**Lens 41.3 mm, 15° field of view incl. case**
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.

**Lens 24.6 mm, 25° field of view incl. case**
The standard 25° lens is suitable for the majority of applications.

**Close-up lens 32 mm (fits 25° lens) incl. case**
The 32 mm lens provides a 2.9X magnification and is ideal for development purposes like looking at PCB’s or small electronic components. Can only be mounted on 25° lens.

**Close-up lens 64 mm (fits 25° lens) incl. case**
The 64 mm lens provides a 5.8X magnification and is ideal for development purposes like looking at PCB’s or small electronic components. Can only be mounted on 25° lens.

Miscellaneous

**Hard transport case**
Rugged, watertight plastic shipping case. Holds all items securely. The case can be locked with padlocks and features a breather valve to prevent pressure build-up in airplane cargo holds.

**Tripod adapter**
Tripod adapter, necessary to be able to mount the camera on a tripod.

**Neck strap**
Ties the camera around your neck so that it is protected against falling.

**Large eyecap**
Can be mounted on the viewfinder.

**Stylus pen**
Can be used to operate the touch screen.

**Extech Clamp meter EX845**
Can be connected to the thermal imaging camera through MeterLink™

**Extech Moisture meter MO297**
Can be connected to the thermal imaging camera through MeterLink™
FLIR P-Series

Accessories

Power

Battery
Extra battery that will allow you to spend extra time in the field doing inspections.

Battery charger
This 2 bay battery charger is used for charging FLIR Systems’ camera batteries.

Cigarette lighter adaptor kit, 12 V DC, 1.2 m
Can be used to power the camera from the cigarette lighter socket in a car.

Power supply incl. Multi-plugs
This power supply is used when powering the camera from the mains supply or to charge the batteries. It comes with different types of plugs.

Storage

Adaptor, SD memory card to USB
Allows to transfer the images from the SD card to a PC.

Memory card micro-SD with adaptors
Capture images on the go with your camera. These small cards are easy to use and can hold great amount of data.

Extended measurement ranges

High temperature option to +1,500°C
Allow to measure temperatures of up to +1,500°C with the camera.

High temperature option to +2,000°C
Allow to measure temperatures of up to +2,000°C with the camera.

Miscellaneous

Hard transport case
Rugged, watertight plastic shipping case. Holds all items securely. The case can be locked with padlocks and features a breather valve to prevent pressure build-up in airplane cargo holds.

Option for IR-video streaming
Radiometric IR-video streaming using FireWire

Bluetooth® headset
Headset with Bluetooth® for wireless connection with the thermal imaging camera, including microphone.

Headset, 3.5 mm plug
This headset is used when annotating thermal images with voice messages. It features an adjustable microphone that can be on the right or on the left side of the headset. It connects to the headset connector on the camera.

Remote control unit
Can be used to control the camera safely from a remote distance. Extremely useful when the camera needs to look at dangerous processes.
Bluetooth USB micro adaptor
Can be plugged in the camera to transfer data from selected Extech instruments to the camera and for connecting the Bluetooth headset to the camera.

Extech Clamp meter EX845
Can be connected to the thermal imaging camera through MeterLink™

Extech Moisture meter MO297
Can be connected to the thermal imaging camera through MeterLink™

Lenses

Lens 19 mm, 45° field of view
Sometimes there isn’t enough room to step back and see the whole picture. This wide angle lens has a field of view almost double than the one of the standard 24° lens. Perfect for wide or tall targets such as electrical panels or paper machinery.

Lens 38 mm, 24° field of view, incl. case
The 24° lens can be used for daily inspections. Suitable for the majority of applications.

Lens 76 mm, 12° field of view, incl. case
When the target in question is a distance away it may be useful to use a telescope lens. The 12° lens is a popular lens accessory and provides 2X magnification compared to the 24° lens. Ideal for small or distant targets such as overhead power lines.

Lens 131 mm, 7° field of view, incl. case
For maximum magnification, the 7° lens is the only choice. This optic provides almost 3.5X magnification compared to the 24° lens and is ideally suited for inspection of overhead power lines. Due to the weight of this lens, a tripod is recommended.

Protective window (fits 24° lens) with case
A protective plastic window: suitable when the camera is used in a dusty environment or when there is a risk of liquids splashing on the lens. The window is made of monocrystalline fluoride.

Cables

FireWire cable 4/6, 2 m
This cable is used to connect a thermal imaging camera to a computer using the FireWire protocol.

FireWire cable 6/6, 2 m
This cable is used to connect a thermal imaging camera to a computer using the FireWire protocol.

USB cable Std-A <-> Mini-B, 2 m
Can be used to transfer images from the camera to a computer using the USB protocol.

Video Cable RCA to RCA
This cable can be used to transfer the images of the P-Series thermal imaging cameras to a monitor.
The products described in this publication may require government authorization for export/re-export, or transfer. Contact FLIR Systems for details.

Specifications are subject to change without notice. Weights and dimensions are indicative. Imagery used for illustration purposes only.

April 2011. All previous catalogues are obsolete.

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