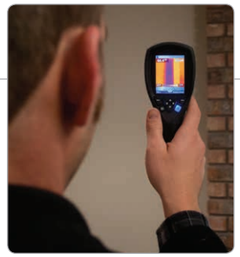
FLIR Thermal Imaging Cameras for Building Diagostics

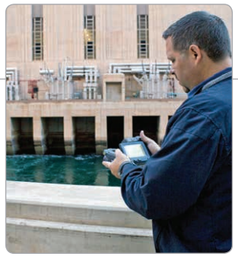
All New
E-Series bx

T-Series bx

Your Vision Is About to Go Thermal

FLIR thermal imaging cameras let you see amazing things that your eyes alone can't, taking you beyond the visible spectrum into the infrared world of hot and cold. With the power to detect and visualize heat issues, a FLIR can show you where potential trouble is brewing. By using a thermal imager to help you find hidden problems early, you have a chance to get them fixed before they cause "self-evident" damage, waste more energy, hurt someone, or shut things down.



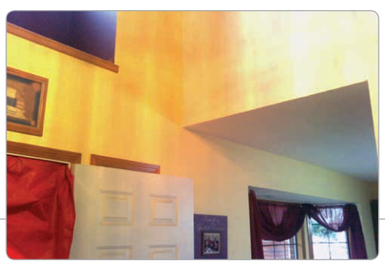


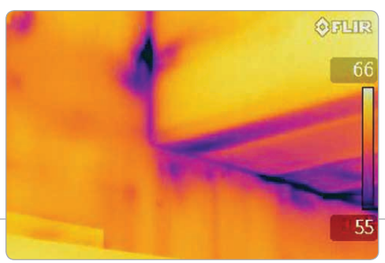
Which Camera is Right for You?

Whether you're new to infrared inspections or already a Level III thermographer, a variety of important factors will figure into your thermal camera decision: how often you use the camera, what you're inspecting, the angles you're shooting from, target size, high temperatures, distance, and other considerations. That's why we've created this guide to help you determine the right fit for your application, budget, and the way you like to work.

Consider the insulation contractor who got off to a fast start with a low-cost i7 and quickly became known for finding all kinds of ways to help people save on their energy bills. Needing to add a second camera to keep pace, he chose an E60 for its higher IR detail, built-in digital camera, and MSX® enhancement for clearer documentation. The FLIR app connectivity to his iPad made it easier to show results to customers. And the 320 x 240 image clarity improved his web site.

Obviously, different requirements mean one thermal imager may or may not fit all. So, along with this guide, we encourage you to consult with your FLIR dealer or representative who will gladly help you hone your decision.





Visit www.flir.com, or call 866.477.3687

*The thermal images shown are for illustrative purposes only, and may not have been taken by the camera series depicted.

MSX: A Bold New Form of Thermal Imaging

If you plan to share saved images with customers or co-workers, a thermal image alone isn't always enough to help them understand what they're seeing. That's why FLIR developed MSX® Multi-Spectral Dynamic Imaging to bring together the best of both spectrums in a striking, innovative way. Now onboard the full line of new FLIR E-Series and T-Series cameras, MSX instantaneously generates a definitive, all-in-one thermal picture that easily orients you to the location of the problem as soon you see it on the screen or in a report. No more guesswork or messing around with extra photos.

Why You Need MSX

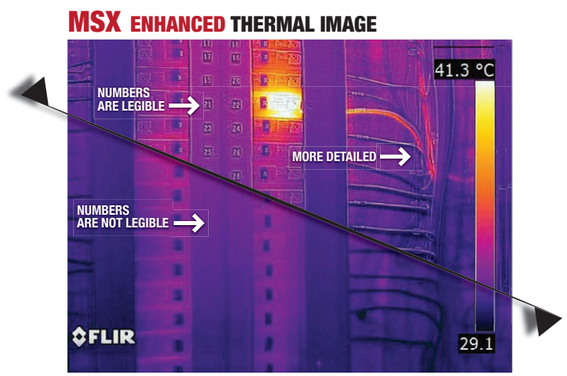
Key details apparent to the naked eye like numbers, labels, signage, and structural features can get lost in a regular thermal image, often requiring a separate digital photo to reference the location of the temperature issue you've found. Thermal imagers of the past have featured ways to blend or insert a portion of a thermal image into a visible light picture. But these modes have only provided a partial solution and typically take extra time to dial in and interpret. They also tend to limit or obscure the thermal view of the scene.

What Makes It Unique

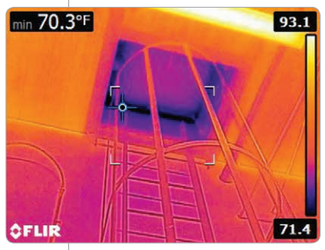
MSX is completely different. Using FLIR's patented algorithm, MSX extracts the high-contrast highlights from the built-in visible camera's image and then virtually etches the skeletonized details onto the entire corresponding FLIR infrared image in real time, enhancing the clarity and maintaining the integrity across the whole frame instead of compromising it. The result: totally recognizable thermal video and snapshots integrated with all the texture, depth and definition you need to isolate the problem in one simple picture.

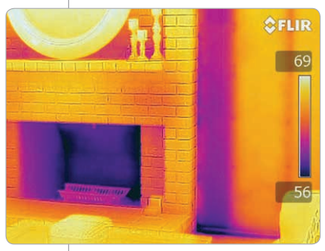
MSX Marks the Spot

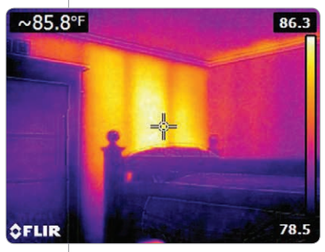
Whether it's in person, on a smartphone, or delivered in a report, stunning and convincing MSX images give you an extra edge to help you tell a much better story, get a faster yes for repairs, save customers and companies money, and look like a hero in their eyes.

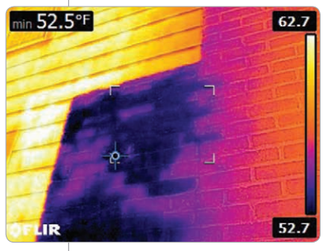


MSX







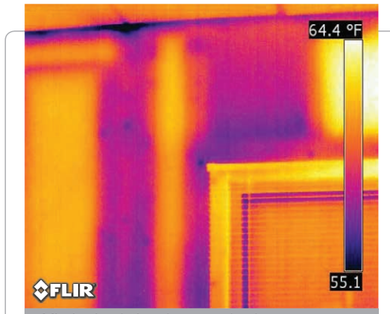


FLIR

Thermal Imaging for Building Diagnostics

FLIR infrared cameras give you the power to make the invisible visible. With thermal imaging, you can see, detect, and document telltale temperature differences that show moisture damage, missing insulation, air drafts, nests in walls, and more.

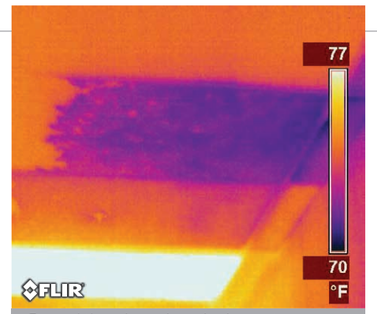
Thermal imagers from FLIR can help you find hidden building problems faster than any other technology, and produce customized reports to justify and validate the quality of repair work.



Missing insulation shows up clearly.

Missing Insulation

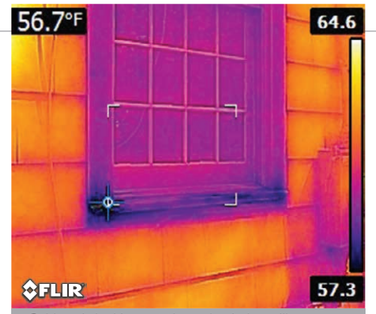
Locate poor insulation quickly by detecting and comparing differences with surrounding areas.



Even subtle moisture intrusion is easy to see.

Water Damage

Find and fix hidden water damage quickly before small problems become big, expensive ones, and document proof of your repairs.



Colder air leaking out through window sill

Air Leaks

Detect air leaks around windows, doors, and other structures. Repairing them saves energy and money.

Overloaded circuit in breaker panel.

Electrical Problems

Finding hidden electrical problems is easy with FLIR, allowing you to take quick action to solve them.

A malfunctioning section of radiant flooring.

HVAC Problems

Discover leaking ductwork and troubleshoot heating, AC, and radiant flooring problems to maximize energy efficiency.

An undetected shower leak leads to serious problems.

Mold and Rot

See temperature differences to expose hidden leaks that can lead to expensive and extensive health issues and structural damage.

Hidden tunneling termites can destroy dwellings.

Destructive Pests

Hunt down burrowing and nesting insects and rodents before they eat customers out of house and home.

E4 thru E8 for occasional IR inspections and simple reports

Home weatherization, HVAC, and restoration contractors

- *Affordable simplicity for any application*
- *RESNET-standard E6 for energy reviews*
- *Tool box ruggedness you can trust*

E40bx thru E60bx for more frequent inspections and detailed reports

Structural inspections, energy performance, & pest control

- *FLIR Wi-Fi app & touchscreen efficiency*
- *MeterLink communication to moisture meter data*
- *Interchangeable telephoto & wide angle lenses*

T420bx thru T640bx for high-demand IR services and consistent reporting

Commercial building, restoration companies, and roofing experts

- *Gets the best shots from any angle comfortably*
- *Highest image detail for clearest documentation*
- *Feature-rich high performance*

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Introducing the FLIR E4, E5, E6 and E8

Visible, and MSX Imaging

Now you can afford the ultimate home inspection tool. Gain the competitive advantage, get more done, and take care of more customers. Blow them away with dramatic MSX thermal images that clearly reveal where missing insulation, air leaks, and moisture intrusion are hiding -- convincing evidence that shows where to make repairs to improve energy efficiency, structural integrity, and comfort. An E4, E5, E6 or E8 can help you solve problems and save money for property owners, leading to greater credibility and opportunities.

Focus-free IR and Visible Camera for Point-and-Shoot Simplicity

Protective Lens Cover Slides Open Easily

Trigger Captures Radiometric JPEG Images

Ruggedness You Can Trust Withstands 2 Meter Drop

Excellent 3" Color LCD Shows the Whole MSX Scene

Quick Button Access to Measurement, Parameter, and Imaging Tools

Quick-release Re-chargeable Battery

What New E4, E5, E6 & E8 Cameras Offer

- **MSX –** *Recognize problem locations instantly when you see thermal images enhanced with visible camera details such as numbers, signage, labels, and other identifiable features.*
- **IR Resolutions to Fit Your Application –** *Choose from the E4's 4800 pixel resolution all the way up to the impressive 320 x 240 thermal imagery of the E8.*
- **Reliable Results –** *FLIR's outstanding thermal accuracy (within 2% or +/- 2°C) and broad measurement range (-4°F to 482°F) for results you can count on.*
- **Fully Radiometric Images –** *Stores hundreds of thermal, MSX and visible image JPEGs with all temperature data intact ready to download to your Mac or PC.*
- **Compact Design –** *Light at about 20 ounces (575g) for easy one-handed operation yet tough enough to stow with the rest of your tools.*

E6 and E8 meet RESNET standard

Reporting Software Included

USB Output for Fast Image Downloads

Visit www.flir.com, or call 866.477.3687

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FLIR

The New FLIR E40bx, E50bx and E60bx

...at Keeps Getting Better

If you're a busy home inspector, energy auditor, or HVAC pro who frequently takes advantage of thermal imaging to uncover heat issues affecting building performance, you need to work efficiently and be able to share images and detailed reports quickly. FLIR's latest E40bx, E50bx and E60bx cameras with MSX can help you do just that, providing an excellent, new array of imaging, communication, and productivity tools to make your job a whole lot easier.

Connect to Smartphones and Tablets with FLIR Tools Mobile for Apple® and Android™ to Stream Video and Import, Process, and Share Images Fast

Large 3.5" Touchscreen Puts Thermal Details at Your Fingertips

- 3.1 MP Digital Camera
- LED Lamp
- Laser Pointer

Visible Light Pictures Align with Thermal Images

Superior MSX Thermal Imaging up to 76,800 Pixels for Longer Range

Built Rugged to Withstand a 2 Meter Drop

Simple, One-Handed Operation

More E40bx, E50bx, and E60bx Productivity and Imaging Features

- **Incredible Choices –** *Four models with resolutions ranging from 160 x 120 up to 320 x 240.*
- **MSX –** *Every model allows you to view and save images in stunning MSX mode as well as picture-in-picture to overlay thermal onto visible images for easy location orientation and clearer documentation.*
- **Multiple Measurements –** *Add up to 3 box areas and 3 moveable spots with the touchscreen to gather detailed temperature information.*
- **Perpetual Battery Operation –** *2-bay charger and spare battery option means plenty of power to keep you running all day.*
- **MeterLink® –** *Measure more than temperature by connecting compatible clamp & moisture meters to E-Series cameras via* Bluetooth to annotate images to further support findings.
- **Reliable Measurements –** Accuracy calibrated within 2% or +/-2°C to meet the standard you can always trust FLIR to deliver.

Auto-Orientation Keeps Diagnostics Overlays Upright

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FLIR®

FLIR T-Series

or Intensive IR Inspections

Look high and low comfortably all day and get those hero shots effortlessly with T-Series, thermal imaging's most flexible and highest resolution hand-held cameras. Scan targets from the toughest angles without stress with our unique rotating optical block that lets you point the lens up or down while keeping the display relaxed at eye level. And take advantage of FLIR's other industry-first features, including MSX enhancement to help you image more clearly and isolate problems even faster.

Joystick & Large Backlit Buttons for Gloved Operation

3.5" Bright Touchscreen for Quick Access to Images, Camera Tools, & Analytics

T440

T640 Viewfinder Makes Surveys in the Brightest Environments Even Easier

Large 4.3" Touchscreen Puts Fast Tools at Your Fingertips

T640

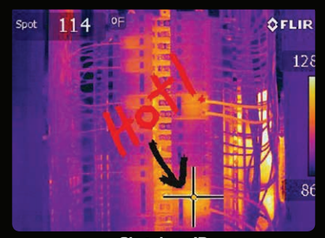
FLIR Tools Mobile App Connectivity to Apple® and Android™ Devices for Fast Image Transfer, Processing, and Sharing Plus Streaming Video & Remote Control

T420 & T440 Features

- **Superior IR Images –** Sharp thermal resolution at 76,800 pixels for solid accuracy from farther away.
- **Advanced Optics –** The widest array of lens options to fit the view and spot size you need for your application.
- **MSX Enhancement –** Multi-Spectral Dynamic Imaging adds visible spectrum definition to IR images in real time for extraordinary thermal detail that instantly highlights and orients problem locations.
- **Scalable P-i-P –** Overlay thermal images onto visible light pictures as an alternative reference.
- **Delta T & Multiple Measurement Tools –** Powerful onscreen analytics include differential temperature, 5 measurement spots, 5 box areas, isotherm and more for detailed diagnostics
- **Sketch on IR/Visual –** Draw circles and pointers on stored images right from the touchscreen to highlight points of interest*
- **Annotation –** Add voice or text comments to images or use the touchscreen to sketch notes and drawings; include additional measurements with MeterLink -enabled clamp and moisture meters.
- **Humidity & Insulation Alarms –** Available on bx models to quickly alert you to detected moisture intrusion and insulation issues.
- **Compass –** Adds camera pointing direction to every image for additional location documentation

*Available on T440 only

With MSX Enhancement



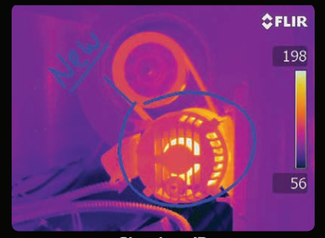
Sketch on IR

T620 & T640 Features

- **Highest IR Resolution in Its Class –** Crisp thermal images with 307,200 pixels (640 x 480) for the best detection, pictures, and temperature measurements from long range.
- **Advanced Optics –** A range of lens options includes our new, light 7° telephoto lens that provides astounding clarity, accuracy, and portability for imaging overhead and distant targets.
- **Continuous Auto Focus –** Keeps your image sharp automatically no matter where you aim for the highest clarity, accuracy, and efficiency*
- **MSX Image Enhancement –** Onboard and real time, MSX adds visible spectrum definition to IR images for extraordinary thermal detail that instantly highlights and orients problem locations.
- **Thermal Fusion & P-i-P –** Blend thermal and visible light images onscreen as another way to identify targets and locations easily; use fusion "threshold" to isolate hotspots in a scene.
- **More Measurement Tools –** Report all the details with 10 measurement spots, 5 box areas, Delta T temperature differential, isotherm, and auto hot/cold markers
- **Sketch on IR/Visual –** Draw circles, pointers, and notes on stored images using the touchscreen to highlight points of interest.*
- **GPS –** Built-in GPS automatically adds location data to images for including in reports

*Available on T640 only

With MSX Enhancement

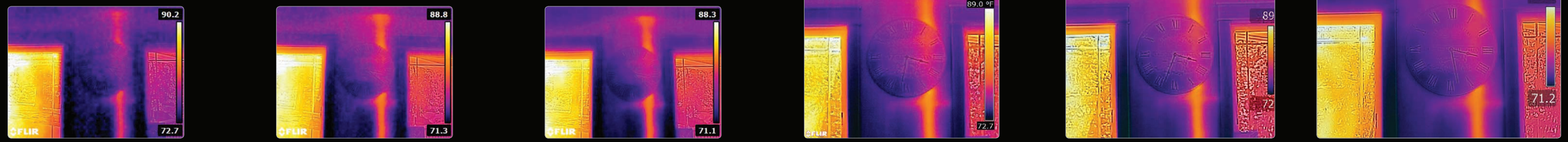


Sketch on IR

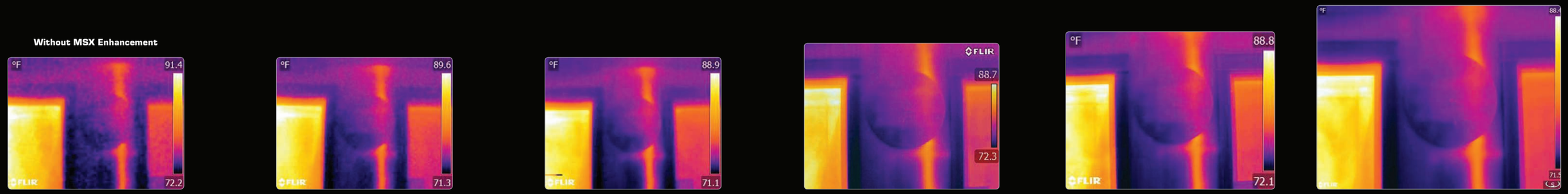
Which FLIR Thermal Camera Resolution is Right for You?

…chool IR thermometer with a serious thermal imaging tool. Perhaps you …andards and gives you a wider field of view to scan larger areas. Or higher resolutions for greater image detail and temperature accuracy that helps tell the story even better. Whatever your infrared inspection program or business calls for, FLIR offers the best choice of resolutions, features, and innovations to create the right mix and the right fit.

With MSX Enhancement



Without MSX Enhancement



E4
80 x 60 (4,800 Pixels)

E5
120 x 90 (10,900 Pixels)

E6 & E40
160 x 120 (19,200 Pixels)

E50
240 x 180 (43,200 Pixels)

E8, E60, T420 & T440
320 x 240 (76,800 Pixels)

T620 & T640
640 x 480 (307,200 Pixels)

Optional lenses available for E40 on up. See specifications for details.

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FLIR

Imaging Specifications



Specifications	Point & Shoot				Performance			High-Performance			
Model	**E4**	**E5**	**E6**	**E8**	**E40bx**	**E50bx**	**E60bx**	**T420bx**	**T440bx**	**T620bx**	**T640bx**
Accuracy	±2% or 2°C				±2% or 2°C			±2% or 2°C			
IR Pixel Resolution	4,800 (80 × 60)	10,800 (120 × 90)	19,200 (160 × 120)	76,800 (320 × 240)	19,200 (160 × 120)	43,200 (240 × 180)	76,800 (320 × 240)	76,800 (320 × 240)		307,200 (640 × 480)	
Thermal Sensitivity	<0.15°C	<0.10°C	<0.06°C	<0.06°C	<0.045°C			<0.045°C		<0.04°C	<0.035°C
Temperature Range	-4° F to 482°F (-20° to 250°C)				-4° F to 248°F (-20°C to 120°C)			-4°F to 662°F (-20°C to 350°C)	-4°F to 1202°F (-20°C to 650°C)	-40°F to 1,202°F (-40°C to 650°C)	
Display Size/Format	3.0"/Landscape				3.5"/ Landscape			3.5"/Landscape		4.3"/Landscape (Widescreen)	
Auto Orientation	—	—	—	—	•	•	•	—	—	—	—
MSX® Thermal Image Enhancement	•	•	•	•	•	•	•	•	•	•	•
Viewfinder	—	—	—	—	—	—	—	—	—	—	•
Measurement Modes	Spot (center) mode	2 modes: 1 Spot (center); 1 Area Box (Min/Max)	3 modes: 1 Spot (center); 1 Area Box (Min/Max); Color Alarm – blue below or red above set Temp.		5 modes: 3 Spots; 3 Area Boxes (Min/Max); Color Alarm – blue below or red above set Temp.;Auto hot/cold spot; Delta T			6 modes: 5 Spotmeters, 5 Area Boxes, Isotherm, Auto hot/cold spot, Delta T and 1 live line profile		6 modes:10 Spots, 5 Area Boxes/Circles, Isotherm, Auto hot/cold spot, Delta T and 1 live line profile	
Spot mode	Center/Fixed				3 moveable			5 moveable		10 moveable	
Frame Rate	9 Hz				60Hz			60 Hz		30 Hz	
Field of View	45° × 34°				25° × 19°			25° × 19°			
Optional Lenses	—	—	—	—	2: 15° Telephoto; 45° Wide Angle			6: 6°, 15° Tele, 45° Wide, 90°; Close up: 100, 50 µm		6: 7° & 15° Tele, 45° Wide; Close-up: 80, 100, 50µm	
Focus	Focus free				Manual			Manual & Automatic			
Continuous Auto Focus	—	—	—	—	—	—	—	—	—	—	•
Min. Focus Distance	1.6 ft. (0.5m)				1.31 ft (0.4 m)			1.31 ft (0.4 m)		0.82 ft (0.25 m)	
Radiometric JPEG via USB	•	•	•	•	•	•	•	•	•	•	•
Radiometric JPEG to SD Card	—	—	—	—	•	•	•	•	•	•	•
MPEG4 to SD (non-radiometric IR)	—	—	—	—	•	•	•	•	•	•	•
Thermal color palettes	3: Iron, Rainbow, and Gray				7: Arctic, White hot, Black hot, Iron, Lava, Rainbow, and Rainbow High Contrast			6: Arctic, Gray, Iron, Lava, Rainbow, and Rainbow High Contrast			
FLIR Tools for PC and Mac	•	•	•	•	•	•	•	•	•	•	•
Battery Operating Time	~4 hrs				>4hrs			>4hrs		>2.5 hrs	>2.5 hrs
Built-in Digital Camera	640 × 480				3.1 MP			3.1 MP		5 MP	
Built-in Illuminator LED	—	—	—	—	•	•	•	•	•	•	•
Touchscreen	—	—	—	—	•	•	•	•	•	•	•
Digital Zoom	—	—	—	—	2×	4×		4×	8×	4×	8×
Insulation Alarm	—	—	—	—	•	•	•	•	•	•	•
Humidity Alarm	—	—	—	—	•	•	•	•	•	•	•
MeterLink® connectivity	—	—	—	—	•	•	•	•	•	•	•
Laser Pointer + Laser Locator (on IR image)	—	—	—	—	•	•	•	•	•	•	•
Compass	—	—	—	—	—	—	—	•	•	•	•
GPS	—	—	—	—	—	—	—	•	•	•	•
IR Window Correction	—	—	—	—	•	•	•	•	•	•	•
Delta T	—	—	—	—	•	•	•	•	•	•	•
Picture in Picture	—	—	Fixed PIP	Fixed PIP	Fixed PIP	Scalable PIP		Scalable & Moveable			
Thermal/Visual Fusion	—	—	—	—	—	—	—	•	•	•	•
Onscreen Sketching	—	—	—	—	—	—	—	•	•	•	•
Sketch on IR/Visual Image	—	—	—	—	—	—	—	—	•	—	•
Voice/Text Annotation	—	—	—	—	•	•	•	•	•	•	•
FLIR Tools Mobile Wi-Fi app	—	—	—	—	•	•	•	•	•	•	•
Streaming Video via Wi-Fi app	—	—	—	—	•	•	•	•	•	•	•
Remote Control via Wi-Fi app	—	—	—	—	—	—	—	•	•	•	•
Drop (2 meter/6.6 feet)	•	•	•	•	•	•	•	—	—	—	—
Weight (including battery)	1.27 lbs (0.575 kg)				1.94 lbs (0.88 kg)			1.94 lbs (0.88 kg)		2.87 lbs (1.3 kg)	

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The Infrared Training Center

Thermal Imaging Heroes Needed: Be Ready to Answer the Call

Today's cameras are simple to turn on, point at a target, and start capturing stills or video clips. Determining whether you're seeing a problem, analyzing your images, navigating your free software, and developing an accurate, actionable report is what's going to make you a thermography hero. That's going to require some training. The Infrared Training Center (ITC)—FLIR Systems' education arm—wants to see you succeed.

The greater your knowledge about thermal imaging, the greater the dividends you'll realize for your company and your career. The ITC offers classes for practically every application, from free online courses to advanced training that can certify you as a thermography expert.

Come to classes at our training center or at one of our many regional classes. On-site training at your facility is also available if you would like to certify a group of 10 or more. For a complete list and schedule of courses and more information, visit www.infraredtraining.com or call 1.866.872.4647.

itc INFRARED TRAINING CENTER

About FLIR

All infrared cameras are not created equal, because infrared camera manufacturers are not all the same. FLIR stands above the rest.

The largest commercial infrared company in the world, FLIR has nearly 50 years of experience building and integrating high-performance infrared cameras, giving us a command of these specialized technologies that no one else can touch.

FLIR's products are at work every day saving lives, protecting our troops overseas, and helping to keep borders and facilities safe.

Now, FLIR's cameras are available for your personal use, too. You can have a FLIR on your boat, your car, or even as a home security camera. The same FLIR technology in your maintenance camera is in Audi and BMW cars as a pedestrian detection system. And if you enjoy hunting and outdoor actives, there's an inexpensive FLIR for you too. You might not know FLIR by name, but you have been seeing our products at work since the 1960's.

If you are looking for infrared camera products, you've come to the right place.

FLIR®