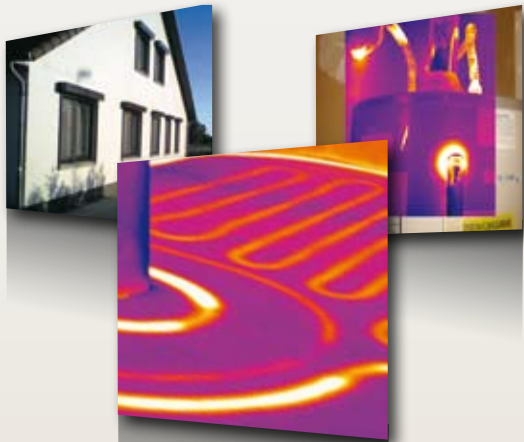




# FLIR B660

The FLIR B660 high-definition infrared camera delivers maximum thermal sensitivity and imaging features for advanced building and energy surveys.

## IR PERFECTION for building applications



FLIR B660

High resolution infrared imaging

### New and Improved Detector

The B660 infrared camera includes a new 640 X 480 infrared detector that delivers four times greater detail than cameras with 320 x 240 IR resolution. The new detector also delivers optimum <45 mK thermal sensitivity at +30°C to help capture the finest image detail to determine trouble spots in buildings and infrastructure. The B660's high-resolution capability enables accurate readings to be taken at greater distances, which helps ensure productivity, safety, and cost-effectiveness.

### Dynamic Details Enhancement (DDE)

FLIR's exclusive DDE capability brings out detail in IR images. With the introduction of the B660, FLIR is implementing DDE for the first time in a commercial infrared camera. FLIR Systems is the global leader in infrared cameras with more than 40 years experience developing cameras for government, military, and research.

### Survey at Safe Distances

For those applications where safe distances need to be maintained, the B660 can be used with interchangeable lenses and an optional FLIR handheld Wireless LAN-based remote control and display. The B660 also features a large target-distance to spot-size ratio for accurate measurements and analyses. This enables professionals to conduct quick, easy, and safe IR inspections.

### Viewfinder and LCD

The B660 includes a tiltable color viewfinder (800 X 600) and a high resolution LCD (1024 X 600). The tilt-able viewfinder is ideal for outdoor work, especially in bright sunlight. The LCD provides convenient and comfortable viewing for extensive survey work.

### Thermal Fusion™

FLIR's exclusive Thermal Fusion technology makes it easy to create compelling reports and communicate trouble spots to your team. Simply move, resize, and reshape IR images inside images you take with the B660's integral 3.2 Mpixel camera. What's more, the B660 camera supports thermal fusion, which lets you control the right level of infrared and visible light detail in your images. Infrared and visible light images taken with the B660 can be stored in standard JPEG formats. In addition, the B660 takes full-radiometric video clips to further boost productivity of IR inspections.

### Visual Target Illuminator

The B660 visible-light camera has a target illuminator or lamp for taking pictures in low light areas, such as electrical cabinets. The target illuminator ensures good reference visual images can be documented regardless of the lighting conditions.

### FLIR Reporter Software

Images are easily downloaded and managed using FLIR QuickReport and optional FLIR Reporter software. Images can be emailed, and viewed in Microsoft Windows programs without the need for any additional proprietary software.

### Productive Auto Focus

Manual and Auto Focus allows operators greater flexibility when collecting images in a range of settings. Auto Focus allows new users to be productive sooner and manual focus provides the added control when needed.

### Safety Enhancing Laser LocatIR

The Laser LocatIR on the B660 boosts productivity. Simply push a button and the laser position you see on an object is automatically aligned and displayed in the IR image. This feature makes it easier and safer for professionals to mark off trouble spots on roofs and structures. Laser LocatIR also helps overcome the tendency to finger-point – which can be a dangerous practice in high-voltage areas.

### Text and Voice Annotation

Simplify your reporting with the advanced text capabilities of the B660 camera. Create comments using the camera's soft key display or even download text from a PDA to automate image description.

### Three Hours Run-Time on a Single Battery

The B660 includes an intelligent charging station capable of conditioning and charging two 3-hour batteries at a time. In addition, like a cell phone, you can plug the B660 into an AC outlet or optional 12V cable and charge the battery while still in the camera.

### Factory Infrared Certification Training and Support

In addition to worldwide service and support, FLIR offers Thermographer certification classes. The FLIR Systems Infrared Training Center (ITC) is the Global leader in IR Thermography Training.



High performance with 640x480 resolution

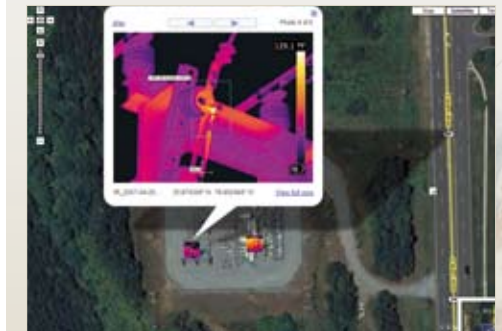
Contrast Optimizer

Built-in GPS

Wireless remote control

We added the world as a feature: locate your infrared images

FLIR has built-in GPS technology into the B660 which allows to clearly position the inspected area and the corresponding infrared images to that area. The images can be loaded into the Reporter software suite, offering links to map and satellite imagery information systems (like Google® Earth) that indicates the geographic location of the images.



Embedded GPS tags in the IR images allow you to zoom in on exact locations and speed up repairs.



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## Technical specifications

<b>Imaging Performance</b>	
<b>Thermal</b>	
Field of view/min focus distance	24° x 18° / 0.3 m
Spatial resolution (IFOV)	0.65 mrad
Thermal sensitivity	@ 30°C <45mK
Electronic zoom / pan function	1 - 8 x continuous, including pan function
Image Frequency	30 Hz (non-interlaced)
Focus	Automatic or manual
IR Lens	24° plus optional interchangeable FLIR lenses
Detector type	Focal plane array (FPA) uncooled microbolometer; 640 x 480 pixels
Spectral range	7.5 to 13 µm
IR Resolution	640 x 480 pixels
<b>Visual</b>	
Built-in digital video	3.2 Mpixel, full color / built-in Target Illuminator / auto focus
Image Presentation	Thermal Fusion™, Picture-in-Picture: move, resize, and reshape IR image inside visible light images; Thermal Fusion: Merging of visual and infrared image (interval, above/below). Show live IR image and reference image on screen for easy troubleshooting.
Reference image Viewfinder	Built-in, tilttable high-resolution color viewfinder (800 x 480 pixels)
Built-in display	Built-in 5.6" LCD (1024 x 600 pixels)
Video output	RS170 EIA/NTSC or CCIR/PAL composite video, IEEE-1394 FireWire, USB
Contrast optimization	Automatic, adjustable, DDE
<b>Measurement</b>	
Object temperature ranges	-40°C to +120°C Two optional temperature ranges: Up to +1500°C and Up to +2000°C
Accuracy	± 1°C or 1% of reading for restricted temperature range or ± 2°C or 2% of reading
Measurement analysis	10 spotmeters, 5 areas; auto hot/cold detection
<b>Menu controls</b>	
Palettes, load custom palettes, auto adjust (manual/continuous/based on histogram equalization), on screen live and reference image (PoP), image gallery, sequence storage, programmable storage, user profiles, programmable buttons	
<b>Alarm functions</b>	
Automatic alarm on any selected measurement function, audible/visible alarm above/below, humidity (includes dew point), insulation	
<b>Emissivity correction</b>	
Variable from 0.1 to 1.0 or select from listings in pre-defined material list	
<b>Measurement features</b>	
Automatic corrections based on user input for reflected ambient temperature, distance, relative humidity, atmospheric transmission, and external optics	
<b>Optics transmission correction</b>	
Automatic, based on signals from internal sensors	
<b>Image Storage</b>	
Type	Removable SD-card (1 GB), built in RAM memory for burst recording
File format	Standard JPEG; 14 bit thermal measurement data included
File format	Standard JPEG inked with corresponding thermal image
Annotations	Voice annotation of images 60 sec. of digital voice "clip" stored together with the image wired headset
Annotations / Tagging	Text annotation of images Predefined by user and stored with image Location tagging of images Uses data from built-in GPS
<b>Video Storage</b>	
Type	Recording of fully radiometric IR-video clips in camera, transferable to SD-card
Recording of MPEG-4	non-radiometric video to SD-card
<b>Video Streaming</b>	
Type	MPEG-4, IP-link using FireWire or USB
<b>Laser LocatIR™</b>	
Classification type	Class 2, Semiconductor AlGaInP Diode Laser: 1 mW/635 nm (red)
<b>Power Source</b>	
Battery type	Li-Ion, rechargeable, field-replaceable
Battery operating time	>3 hours at 25°C (+68°F) typical use
Charging system	In camera (AC adapter or 12V from car) or 2 bay intelligent charger
External power operation	AC adapter 110/220 VAC, 50/60Hz or 12V from car (cable with standard plug optional)
Power saving	Automatic shutdown and sleep mode (user-selectable)
<b>Environmental</b>	
Operating temperature range	-15° C to +50°
Storage temperature range	-40° C to +70° C
Humidity (operating and storage)	IEC 68-2-30/24h 95% relative humidity + 25°C to +40°C
Encapsulation	IP 54 IEC 529
Shock Operational	25G, IEC 68-2-29
Vibration Operational	2G, IEC 68-2-6
<b>Physical Characteristics</b>	
Weight	1.7 kgw/battery
Size	120mm x 145mm x 220 mm
Size	1/4" - 20
Tripod mounting	12° x 9° / 0.9m telelens
Field of view/minimum focus distance	45° x 34° / 0.1m wide angle lens
	Close-up 50µm 32 mm x 24 mm / 75 mm
<b>Other Options</b>	
FLIR Reporter software, FLIR Researcher software, FLIR Image Builder software, Wireless remote control including WLAN interface, Extended warranty (+ 1 year)	
<b>Interfaces</b>	
Connections	USB-A Connect external USB device, USB Mini-B Data transfer to/from PC, IrDA Wireless communication, Firewire output (IEEE 1394) IEEE-1394 FireWire output (real-time none-radiometric video / file transfer to PC)
Slots	SD-card slots (2) I/O slot; storage slot
<b>Camera includes:</b>	
Camera with visual and IR lens, Power supply, batteries (3 hours operating time on each), 2 bay charging station, LIR QuickReport software, Built-in GPS, Manual and Quick Reference Card, SD-card with USB Card Reader, Headset, Cables (USB, FireWire, Video)	

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