

# FLIR B660



## Thermal imaging cameras designed for the expert.

A FLIR 660 camera is the perfect instrument for users who know the advantages that thermal imaging has to offer, and who rely on a thermal imaging camera at work. Whether you are a thermography consultant or a building professional the FLIR B660 thermal imaging camera will help you trace anomalies invisible to the human eye.

640  
x  
480

### 640x480 pixel resolution

The FLIR B660 has a high resolution pixel detector of 640x480 pixels that allows more accuracy and shows more details at a longer distance.



### High sensitivity

< 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

Automatic optimization of brightness and contrast adjustments to make it easier to make thermal analyzes of detailed objects.



### Panorama support

Take images in a sequence and automatically combine them to one large image using the FLIR Reporter software.



### Built-in GPS

GPS allows to georeference infrared images to determine its geographic location.



### Laser Pointer

Helps you associate the hot or cold spot in the IR image with the real physical target in the field.



### Flexible interfaces

Easy access to composite video connection, USB, FireWire, and a direct connection to charge the battery inside the camera.



### MPEG-4 video

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.



### Automatic- and Manual focus, Digital zoom

Focus possibilities include; single shot auto focus, continuous auto focus, laser based or manual focus.



### 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 through a wireless IrDa interface. A Bluetooth® wireless headset can be connected to make voice annotations which are stored with the image.



### 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.



### 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.



### Humidity Alarm / Insulation Alarm

The Relative Humidity Alarm alerts you to the areas where there is a risk of condensation. An Insulation Alarm shows the insulation performance of the building structure.



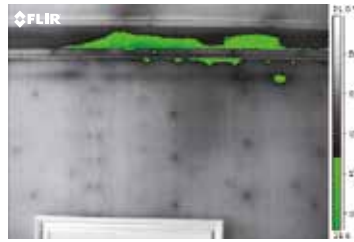
METER LINK  
Bluetooth

## Relative humidity alarm



The relative humidity alarm alerts you to the areas where there is a risk of condensation. In the image below the area at risk is indicated as blue color.

## Insulation alarm



The insulation alarm shows where the areas below or above a set temperature are by making them appear in a different color.



Connect to smartphone or tablet via Wi-Fi, using the FLIR Tools mobile app (Apple iOS and Android) for processing and sharing results as well as for remote control.

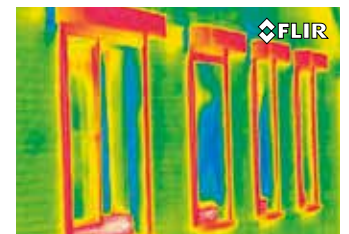
expert and professional



## High resolution



Visual image



Thermal image



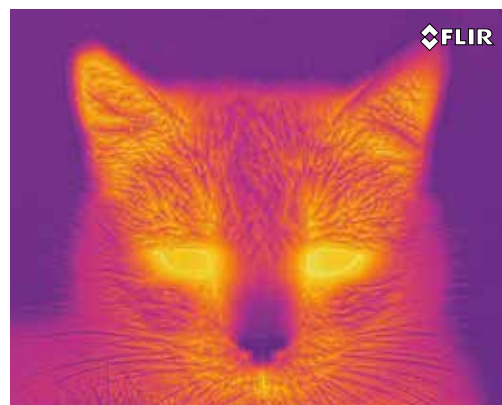
Thermal Fusion image

Thermal inspection reveals energy loss.

## Contrast optimizer



Basic thermal image.



Thermal image enhanced with the Contrast Optimizer function.

# FLIR B660

## Technical specifications

Imaging Performance	
IR resolution	640 x 480 pixels
Spectral range	7.5 - 13 $\mu$ m
Field of View (FOV) / minimum focus distance	24° x 18° / 0.3 m 12° x 9° / 1.2 m 45° x 34° / 0.2 m lens needs to be specified when ordering
Spatial resolution	0.65 mrad for 24° lens 0.33 mrad for 12° lens 1.3 mrad for 45° lens
Thermal sensitivity	30 mK at 30°C
Electronic zoom	1-8x continuous including pan function
Electric and manual focus	Auto (follows laser spot) and manual
Image frequency	30 Hz
Focus	Automatic or manual
Focal Plane Array (FPA)	Uncooled microbolometer
Image presentation	
Display	Built-in Widescreen, 5.6" color LCD, 1024 x 600 pixels
Automatic contrast optimization	Adjustable DDE
Thermal Fusion	IR image shown above, below or within temperature interval on the visual image (with 24° lens only)
Picture in Picture	Resizable and movable IR area on visual image (with 24° lens only)
Viewfinder	Built-in, tiltable LCD, 800 x 600 pixels
Automatic image adjustments	Continuous/manual; linear or histogram based
Manual image adjustments	Level/span/max./min.
Image modes	IR image, Visual image, Thumbnail gallery, Thermal Fusion, Picture in Picture
Reference image	Shown together with live IR image
Measurement	
Temperature range	-40°C to +120°C (optional up to +2000°C)
Accuracy	$\pm 1$ °C or $\pm 1\%$ of reading (restricted range) $\pm 2$ °C or $\pm 2\%$ of reading
Measurement analysis	
Isotherm	2 with above/below interval
Spotmeter	10
Area	5 boxes or circles with Max./Min./Average
Profile	1 live line, horizontal or vertical
Difference temperature	Delta temperature between measurement functions or reference temperature
Automatic hot / cold detection	Max./Min. temp. value and position shown within box, circle or on a line
Humidity alarm	1 humidity alarm including dew point alarm
Insulation alarm	1 insulation alarm
Measurement function alarm	Audible/visual alarms (above/below) on any selected measurement function
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



\* After product registration on [www.flir.com](http://www.flir.com)



<b>Setup</b>	
Set-up controls	Local adaptation of units, language, date and time formats; automatic shutdown, display intensity
Programmable buttons	2
<b>Image storage</b>	
Type	SD memory card
In-camera storage	Built-in RAM for burst recording
Format	Standard JPEG - 14 bit measurement data included
Modes	IR/visual images, simultaneous storage of IR and visual images, visual image is automatically associated with corresponding IR image
Periodic image storage	Every 10 seconds up to 24 hours
Panorama	For creating panorama images FLIR Reporter software
<b>Image annotations</b>	
Voice	60 seconds stored with the image (via Bluetooth®)
Text	Predefined text or free text from PDA (via IrDA) stored with the image
Image marker	4 on IR or visual image
<b>Digital camera</b>	
Built-in digital camera	3.2 Mpixel auto-focus with video lamp
<b>Laser Pointer</b>	
Laser	Semiconductor AlGaInP diode laser, Class 2
Laser alignment	Position is automatically displayed on IR image
Laser mode	Auto-focus / level / spotmeter
<b>Video streaming</b>	
Non-radiometric IR video streaming	MPEG-4 to PC using USB and FireWire
<b>Geographic Information System</b>	
Built-in GPS	Location data automatically added to every image for referencing on WEB maps
<b>Power System</b>	
Battery time	Rechargeable Lithium Ion battery, field replaceable
Battery operating time	3 hours
Charging system	In camera, AC adapter, 2-bay charger or 12 V from a vehicle
Power management	Automatic shutdown , and sleep mode (user selectable)
AC operation	AC adapter, 90-260 V AC, 50/60 Hz
Adaptor voltage	12 V DC out
<b>Environmental specifications</b>	
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)
<b>Interfaces</b>	
Firewire	Yes
USB-A	Connect external USB device
USB Mini	Data transfer to and from PC / streaming MPEG-4
Composite video	PAL or NTSC
IrDA	For sending text comment files from PDA to camera, wireless transfer of text
WLAN	Optional
Headset connection	Yes
WiFi	Connects directly to Ipad/Iphone for image transfer or via local network
Bluetooth®	Communication with headset and external sensors (optional) using USB micro adapter
<b>Physical characteristics</b>	
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
<b>Standard package</b>	
FLIR B660: Hard transport case, Thermal imaging camera with lens, Battery (2 ea., one inserted in camera, one outside camera), Battery charger, Calibration certificate, FLIR Tools™ Download card, FireWire cable, 4/6, FireWire cable, 6/6, Bluetooth® headset, Bluetooth® USB micro adaptor, Lens cap (mounted on lens), Lens cap (2 ea.), Power supply including multi plugs, Memory card-to-USB adaptor, Memory card with adaptor, Power supply, Printed documentation, Shoulder strap, USB cable, User documentation CD-ROM, Video cable , Wi-Fi USB micro adapter (depending on CE and FCC regulations regarding wireless equipment for your country)	