

P/N: 63950-1001

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Website

<http://www.flir.com>

Customer support

<http://support.flir.com>

Disclaimer

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General description	
<p>The FLIR ETS320 is FLIR's first electronic test bench camera, designed for a quick temperature check of PCB boards and electronic devices. The FLIR ETS320 is sensitive enough to detect subtle temperature difference with an accuracy of $\pm 3^{\circ}\text{C}$ (5.4°F), so you can quickly find hot spots and potential points of failure. The 320×240 pixel infrared detector offers more than 76 000 points of temperature measurement, eliminating the guesswork of legacy measurement tools. Designed specifically for bench-top work, the battery-powered FLIR ETS 320 connects to your PC for immediate analysis and sharing of thermal data.</p>	
<p>Benefits:</p> <ul style="list-style-type: none"> • Reduces test times: Quickly identify hot spots, thermal gradients, and potential points of failure. • Improves product design: Know where and when to add fans and heatsinks, and ensure products are operating within specification for their maximum lifetime. • Saves money: Improve rapid prototyping and reduce product development cycles. • Optimizes lab time: Battery powered and hands-free, and offers complete measurement and analysis in the camera. 	
<p>Key features:</p> <ul style="list-style-type: none"> • >76 000 points of non-contact temperature measurement at the push of a button. • 320×240 pixel detector provides crisp thermal imagery. • Time versus temperature measurement with FLIR Tools+. • Small-component measurement, down to $170 \mu\text{m}$ per pixel spot size. • Lens offers a 45° thermal view of the target for the quick detection of hot spots. • Records radiometric imagery in standard JPEG format for easier sharing. • $\pm 3\%$ accuracy promotes quality assurance and factory acceptance of PCBs. • Quickly mounts on the supplied stand for immediate use. • Crisp 3 in. LCD display provides immediate thermal feedback. • World-class software provided for advanced measurement corrections/capabilities. 	
Imaging and optical data	
IR resolution	320×240 pixels
Thermal sensitivity/NETD	$<0.06^{\circ}\text{C}$ (0.11°F)/ $<60 \text{ mK}$
Field of view (FOV)	$45^{\circ} \times 34^{\circ}$
Fixed focus distance	$70 \text{ mm} \pm 10 \text{ mm}$ ($2.8 \text{ in.} \pm 0.4 \text{ in.}$)
Spatial resolution (IFOV)	2.6 mrad
F-number	1.5
Image frequency	9 Hz

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Detector data	
Detector type	Focal plane array (FPA), uncooled microbolometer
Spectral range	7.5–13 μm
Image presentation	
Display	3.0 in. 320 × 240 color LCD
Image adjustment	Automatic/manual
Measurement	
Object temperature range	-20°C to +250°C (-4°F to +482°F)
Accuracy	$\pm 3^\circ\text{C}$ ($\pm 5.4^\circ\text{F}$) or $\pm 3\%$ of reading, whichever greatest, for ambient temperature 10°C (50°F) to 35°C (95°F) and object temperature above +0°C (+32°F)
Measurement analysis	
Spotmeter	Center spot
Area	Box with maximum/minimum
Emissivity correction	Variable from 0.1 to 1.0
Emissivity table	Emissivity table of predefined materials
Reflected apparent temperature correction	Automatic, based on input of reflected temperature
Set-up	
Color palettes	Black and white, iron, and rainbow
Set-up commands	Local adaptation of units, language, date and time formats
Video streaming	
Radiometric IR video streaming	Full dynamic to PC (FLIR Tools/Tools+) using USB
Non-radiometric IR video streaming	Uncompressed colorized video using USB
Storage of images	
File formats	Standard JPEG, 14-bit measurement data included
Data communication interfaces	
Interfaces	USB Micro: Data transfer to and from PC and Mac devices
Power system	
Battery type	Rechargeable Li ion battery
Battery voltage	3.7 V
Battery operating time	Approximately 4 hours at 25°C (77°F) ambient temperature and typical use
Charging system	Battery is charged inside the unit
Charging time	2.5 hours to 90% capacity
Power management	Automatic shut-down
AC operation	AC adapter, 90–260 V AC input, 5 V DC output to camera



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Environmental data	
Operating temperature range	10–40°C (50–104°F)
Storage temperature range	–40 to +70°C (–40 to +158°F)
Humidity (operating and storage)	IEC 60068-2-30/24 h 95% relative humidity
Encapsulation	IP 40 (IEC 60529)
Directives and regulations	
Directives and regulations	<ul style="list-style-type: none">• Battery Directive 2006/66/EC• EMC Directive 2014/30/EU• FCC 47 CFR Part 15 Class B Subpart B• REACH Regulation EC 1907/2006• RoHS2 Directive 2011/65/EC• WEEE Directive 2012/19/EC
Physical data	
System weight, incl. battery	1.8 kg (4.0 lb.)
System size (L × W × H)	220 mm × 150 mm × 300 mm (8.7 in. × 5.9 in. × 11.8 in.)
Color	Black and gray
Shipping information	
Packaging, type	Cardboard box
List of contents	<ul style="list-style-type: none">• FLIR Tools+• Infrared camera unit• Power supply• Printed documentation• USB cable
Packaging, weight	2.9 kg (6.4 lb.)
Packaging, size (L × W × H)	290 mm × 170 mm × 378 mm (11.4 in. × 6.7 in. × 14.9 in.)
EAN-13	4743254002913
UPC-12	845188014186
Country of origin	Designed & Engineered by FLIR Systems, Sweden. Assembled in Taiwan.