

# FLIR ETS320™

## Thermal Imaging Solution for Electronics Testing



The FLIR ETS320 is an affordable solution for reducing test times and improving product design for electronic board and device evaluation. Whether the goal is R&D or product testing, heat can be an important indicator of how a system is functioning. The ETS320 helps engineers and test technicians collect accurate, reliable data in seconds and analyze it quickly.

### Reduce Test Times

*The FLIR ETS320 takes the guesswork out of thermal testing, for fast discovery of hot spots and potential points of failure.*

- Sensitive enough to detect temperature shifts smaller than 0.06°C
- Wide temperature range, from -20°C to 250°C, for quantifying heat generation and thermal dissipation
- Measures small components down to 170 µm per pixel spot size

### Improve Product Design

*The FLIR ETS320 promotes design improvements and shortens product development time by detecting design flaws that materialize as heat.*

- 320 x 240 IR sensor offers 76,800 points of non-contact temperature measurement
- True 45° field of view for broad initial scans to identify potential problems
- Measurement accuracy of ±3°C promotes quality assurance and factory acceptance of PCBs

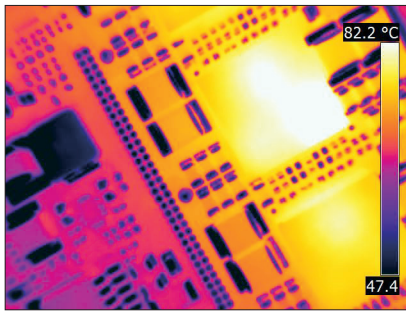
### Designed for Laboratory Work

*The ETS320 is designed for hands-free laboratory testing, with simplified features that allow users to focus on their work instead of on the camera controls.*

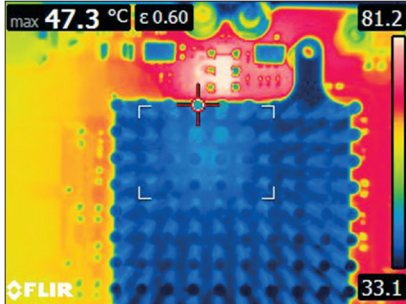
- Pole mount included for fast and easy setup
- Crisp 3" LCD display provides immediate thermal feedback
- FLIR Tools+ software for instant analysis, including Time vs. Temperature measurement

### Key Features:

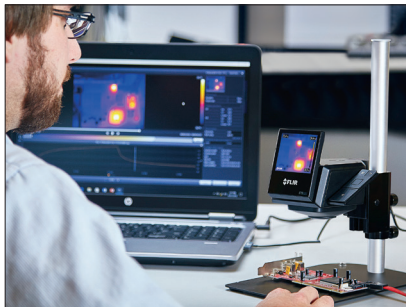
- 320 x 240 IR resolution (76,800 pixels)
- Vibrant 3" LCD display
- 45° field of view
- ±3% measurement accuracy
- Records standard radiometric JPEGs
- FLIR Tools+ software provided



Measure small components down to 170 µm per pixel spot size



Determine where to add or remove thermal management devices



Connect over USB a computer to analyze data in FLIR Tools+

## Specifications

<b>System Overview</b>		<b>ETS320</b>	
IR Resolution	320 x 240 (76,800 pixels)		
Detector Type	Uncooled microbolometer		
Spectral Range	7.5 - 13.0 $\mu\text{m}$		
Thermal Sensitivity/NETD	< 0.06°C		
Field of View (FOV)	45° x 34°		
Fixed Focus Distance	70 mm $\pm$ 10 mm		
F-number	1.5		
Spot Size @ Min. Focus	170 $\mu\text{m}$		
Image Frequency	9 Hz		
<b>Measurement and Analysis</b>			
Object Temperature Range	-20°C to 250°C (-4°F to 482°F)		
Accuracy	$\pm 3^\circ\text{C}$ or $\pm 3\%$ of reading for ambient temperature 10°C to 35°C (50°F to 95°F)		
Spotmeter	Center spot		
Area	Box with max/min		
Emissivity Correction	Variable from 0.1 to 1.0		
Emissivity Table	Table of pre-defined materials		
Reflected Apparent Temperature Correction	Automatic, based on input of reflected temperature		
<b>Storage of Images</b>			
Image File Formats	Standard radiometric JPEG, 14-bit measurement data included		
<b>Video Streaming</b>			
Radiometric IR Video Streaming	Full dynamic to PC (FLIR Tools/Tools+) using USB		
Non-Radiometric IR Video Streaming	Uncompressed colorized video using USB		
<b>Data Communication Interfaces</b>			
Interfaces	USB Micro: data transfer to and from PC and Mac devices		
<b>Power System</b>			
Battery Type	Li-ion battery, charged in camera		
Battery Operating Time	Approx. 4 hours at 25°C (77°F) ambient temperature and typical use		
Charging Time	2.5 hrs to 90% capacity		
<b>Additional Data</b>			
Display	3 in, 320 x 240 pixel color LCD		
Operating Temperature Range	10°C to 40°C (50°F to 104°F)		
Storage Temperature Range	-40°C to 70°C (-40°F to 158°F)		
Directives and Regulations	<ul style="list-style-type: none"> <li>• Battery Directive 2006/66/EC</li> <li>• EMI/EMC Directive 2014/30/EU</li> <li>• WEEE Directive 2012/19/EC</li> <li>• RoHS2 Directive 2011/65/EC</li> <li>• FCC 47 CFR Part 15 Class B</li> <li>• REACH Regulation EC 1907/2006</li> </ul>		
Encapsulation, Shock, Vibration	<ul style="list-style-type: none"> <li>• IP 40 (IEC 60529)</li> </ul>		
Camera Weight, Incl. Battery	0.575 kg (1.27 lbs)		
Camera Size (L x W x H)	22 x 15 x 30 cm (8.7 x 5.9 x 11.8 in)		
<b>FLIR ETS320 Includes:</b>			
List of Contents	Camera, mount, stand, power supply, USB cable, FLIR Tools+ software		