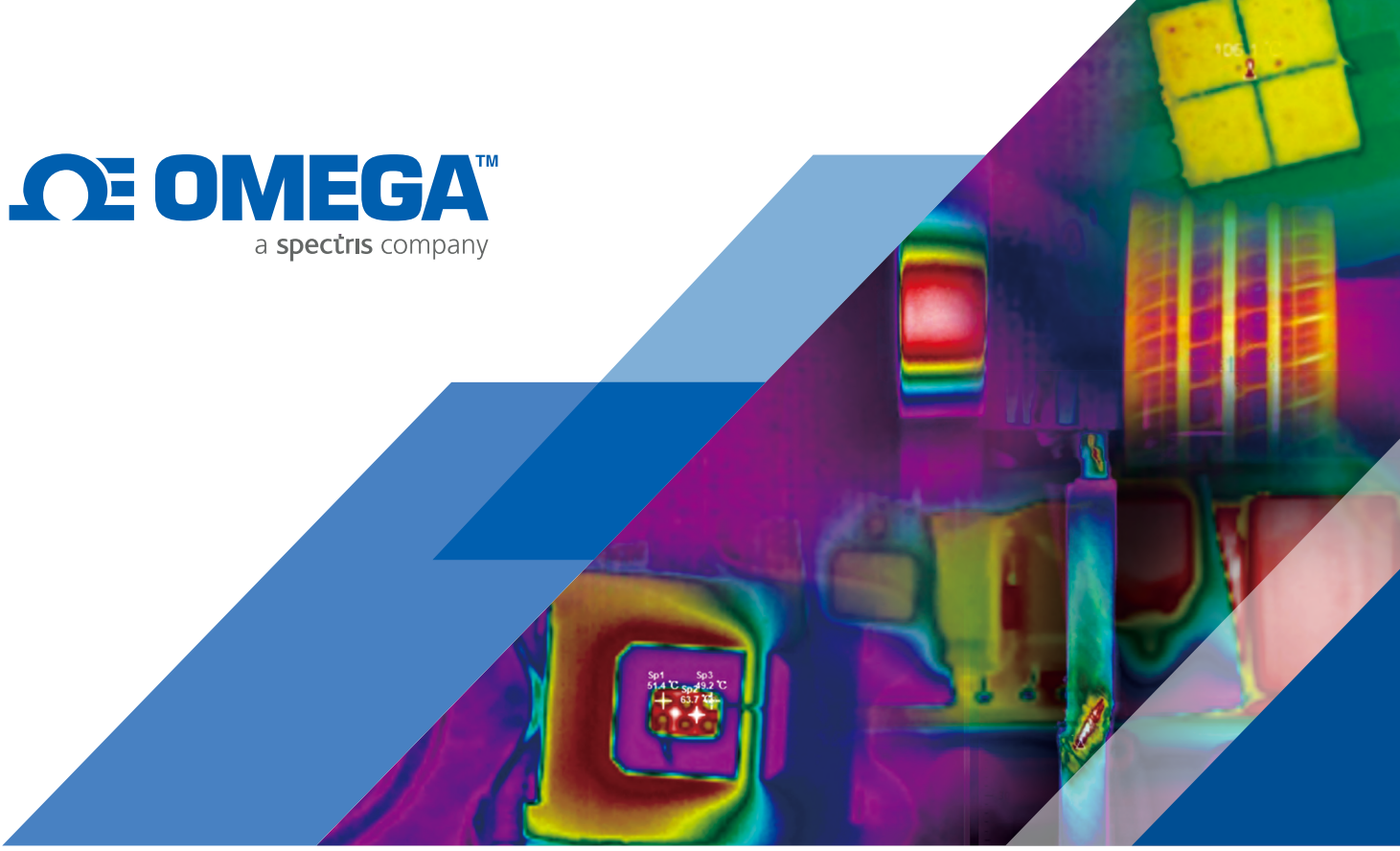
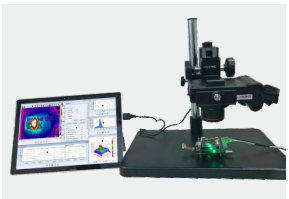
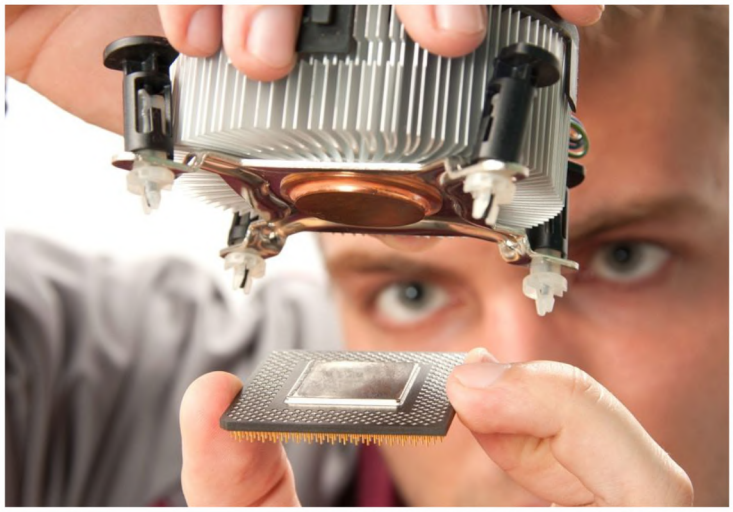
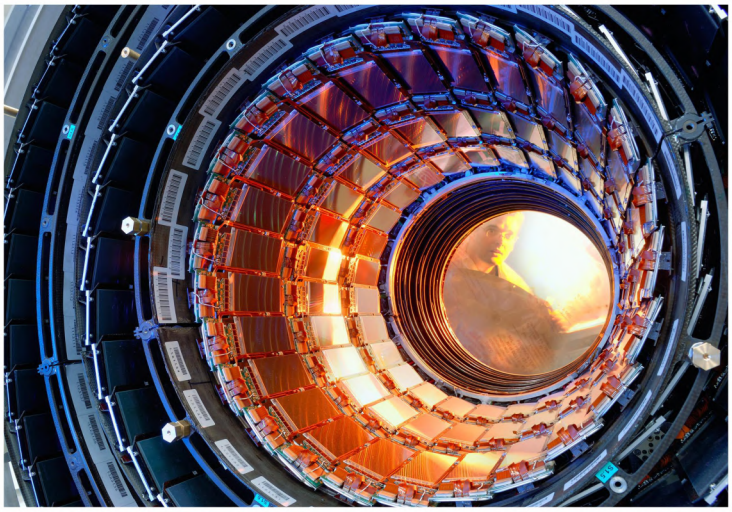
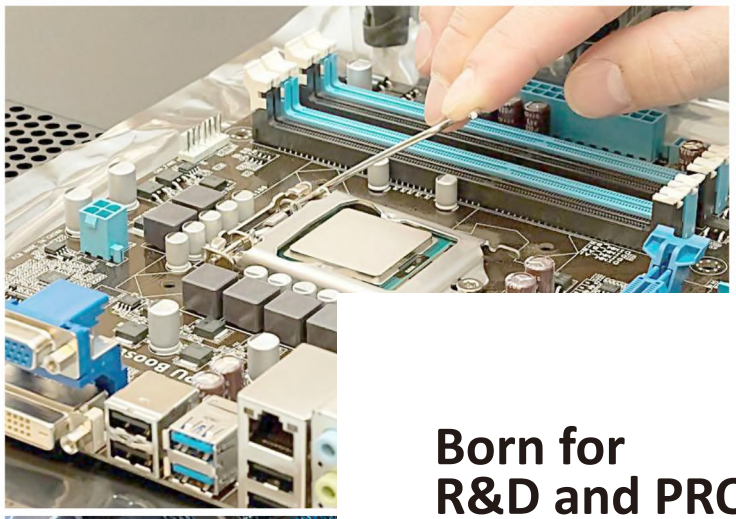
OMEGA™
a spectris company





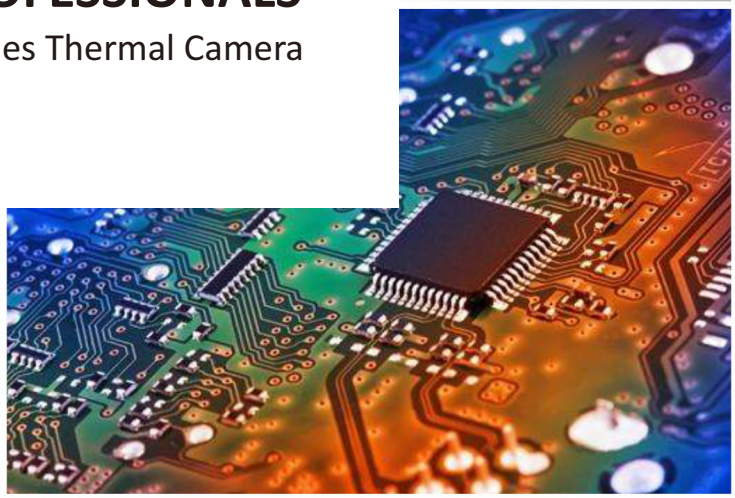
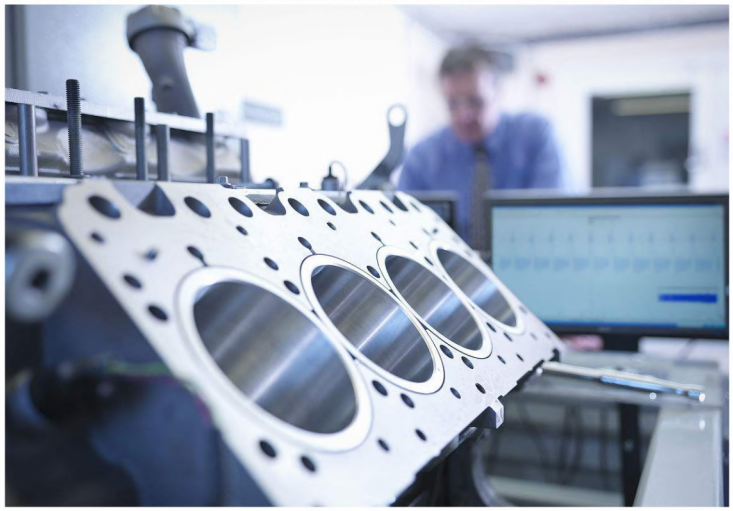
Hand-Held More Convenient I Longer Time Online
More Professional Analysis I Faster Sharing

OMEGA™ TI-120


Born for R&D and PROFESSIONALS

OMEGA TI-120 Series Thermal Camera


R&D user's measurement scene is complex and varied, including not only temporary detection tasks, but also lots of continuous sampling tests (such as trend analysis, reliability test, destructive testing, etc.), and continuous sampling tests may reveal more valuable data.

R&D users often face a dilemma when choosing a thermal camera: They may select a handheld thermal camera but cannot perform continuous sampling tests or they may select an online thermal camera, but lack flexibility.

The OMEGA TI-120 Series thermal camera makes the selection no longer difficult. It's not just a handheld thermal camera, but also an online thermal camera. It is more competent in long-term data sampling tests.

OMEGA TI-125
Resolution: 320×240

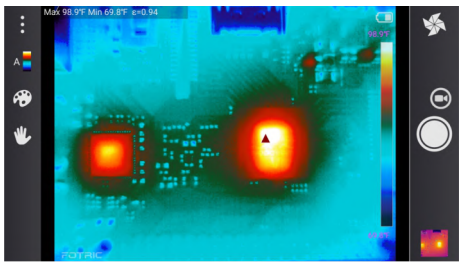
OMEGA TI-126
Resolution: 384×288

OMEGA TI-128
Resolution: 640×480

Hand-Held Is More Convenient

Smartphone Full Touchscreen Operation

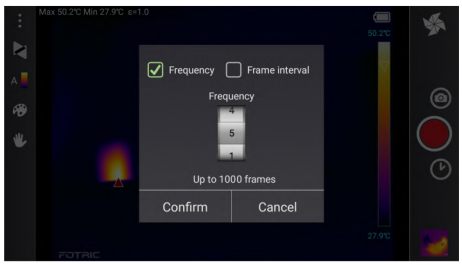
Easy-to-learn smartphone touchscreen APP user interface, ultra-simple operation, and ready to use.



Full Touchscreen APP User Interface

Fully-Radiometric Short Thermal VideoStream To Capture More Details

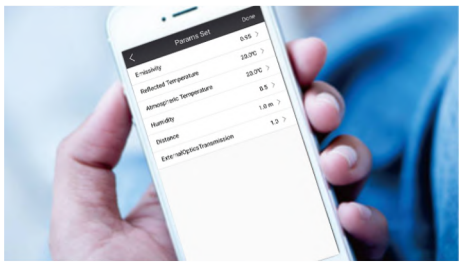
A smartphone connected with a OMEGA thermal camera can record directly up to 1,000 frames of fully radiometric video and capture temperature change processes in real-time with a user-defined sampling rate (up to 5 frames per second). It can automatically collect data without a PC.



Customize Sampling Rate

Analyze The Thermal Image And Video Conveniently On The Smartphone

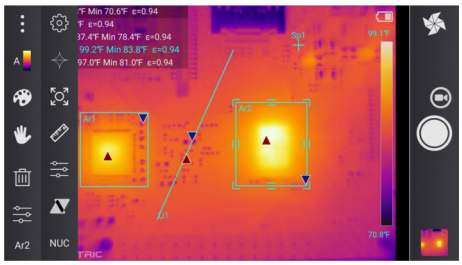
The OMEGA TI-120 series supports the instant analysis of the thermal image and thermal video on the smartphone, which is convenient after the thermal image or thermal video is recorded.



Instant Analysis Of Thermal Image On The Smartphone

Flexible Sub-regional Emissivity Setting And Professional Temperature Measurement Parameter Correction

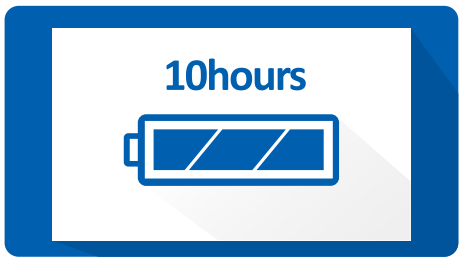
The different emissivity of each sub-region can be set to achieve an accurate temperature measurement of different material. At the same time, transmissivity, test distance, etc. can be set to ensure the accuracy of the temperature.



ROI Emissivity And Parameter Setting On The Smartphone

Long Battery Life And No Worry Of Frequent Charging

The low-power design gives OMEGA thermal camera more than 10 hours of battery life, to ensure a full day without interruption, allowing users to focus on work.



10 Hours Battery Life Of The Thermal Camera

Associate Thermal Image With Detected Object Automatically For Easy And Efficient Data Management

OMEGA thermal camera can scan the equipment QR code and automatically tag thermal images, thus avoiding cumbersome, inefficient and erroneous manual entry.

Instantly Share Thermal Images/Videos Through Favorite Channels

Rapidly share field data with colleagues and solve field problems with remote diagnosis through your favorite channels such as Message, Facebook, LinkedIn, Twitter, etc.

Longer-Time Online

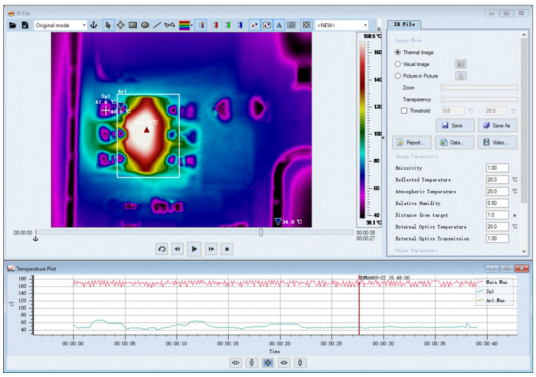
High-Quality Product With Longer Time Online

OMEGA TI-120 Series thermal cameras use expensive, high-end, and long-term work electronic components to ensure long-time normal operation and maintain long service life. With the bypass power supply design, OMEGA thermal camera can work long-term without interruption under the external power mode.

High-end Electronic Component + Professional R&d Test Platform For Longer-time Online

Fully Radiometric Thermal Video Stream

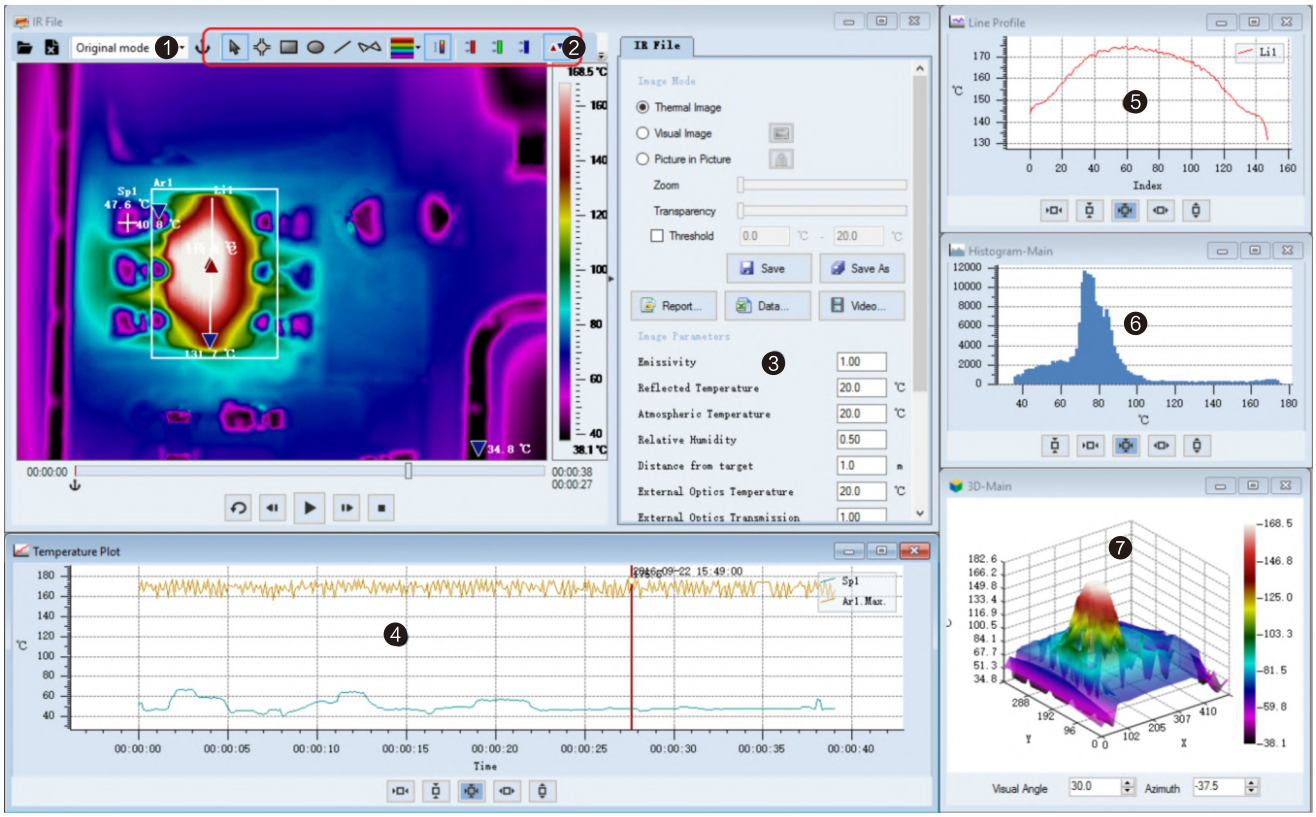
OMEGA TI-120 Series thermal camera works with professional PC software, TI Analyzer, to record fully radiometric thermal video. Each frame of the video stream preserves the original temperature of each pixel.



Any Temperature Spot Or Region Can Be Added And A Temperature Vs. Time Curve Can Be Plotted

TI Analyzer – Professional Analyses Software

OMEGA TI Analyzer software is developed to meet the needs of R&D users, from the image, temperature and time of the three-dimensional perspective to analyze the test data. One thermal picture will have more details and process of changes than the conventional equipment maintenance class thermal imager to obtain more in-depth research, more reliable data, and more valuable paper.



Note:

1. Original / temperature difference mode
2. Spot, line, box, palette, isotherm and other tools
3. Pre- and post- sampling temperature correction; support sub-regional emissivity setting
4. ROI temperature vs. time curve; ROI+ROI temperature vs. time curve; Overlay comparison of different thermal video curve
5. Plot of temperature along the line
6. Histogram
7. 3-D thermal image

1TB Oversized File, Recording Thermal Data Without Interruption

Thermal data collected under the long-term online mode is very large. OMEGA TI-120 Series companion software, TI Analyzer, supports up to 1TB single fully radiometric thermal video recording, which helps R&D users to record the complete data for the entire experimental process.

OMEGA Model	OMEGA TI-125	OMEGA TI-126	OMEGA TI-128
1TB single file recording time (Calculate at 1HZ frame rate)	~84 days	~57 days	~20 days

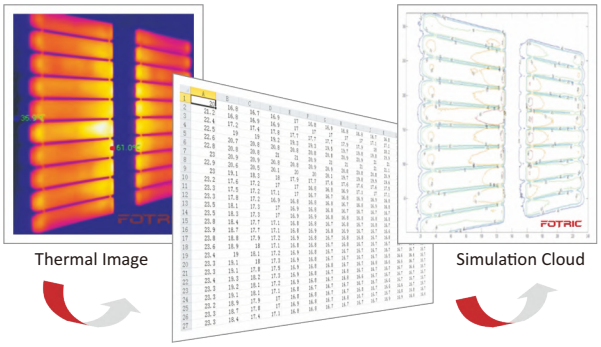
Automatically Collect Data And Free Up Human Resources

Three kinds of automatic data acquisition modes:

① Time trigger ② Temperature trigger ③ External I/O trigger

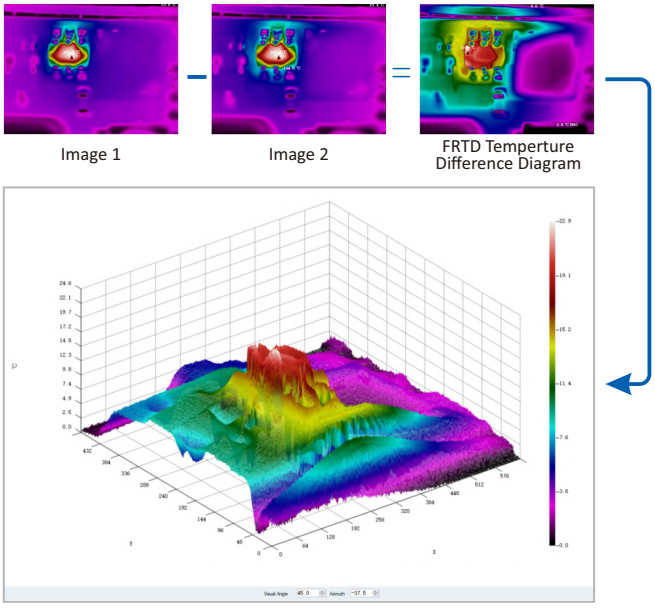
Raw Temperature Data Matrix

Users can pick up any frame of thermal image, save as a fully radiometric thermal image, and export to the .CSV file containing the original temperature of all pixels. These raw temperature data will help you optimize the algorithm, or use other software to generate a simulation contour map.



Raw Temperature Data Matrix Analysis To Reveal Tiny Differences Clearly

Obtain the temperature difference of any two thermal pictures intuitively for faster and more accurate analysis, and generate a more understandable report.



3D Graph

Picture-In-Picture And Picture Fusion Function

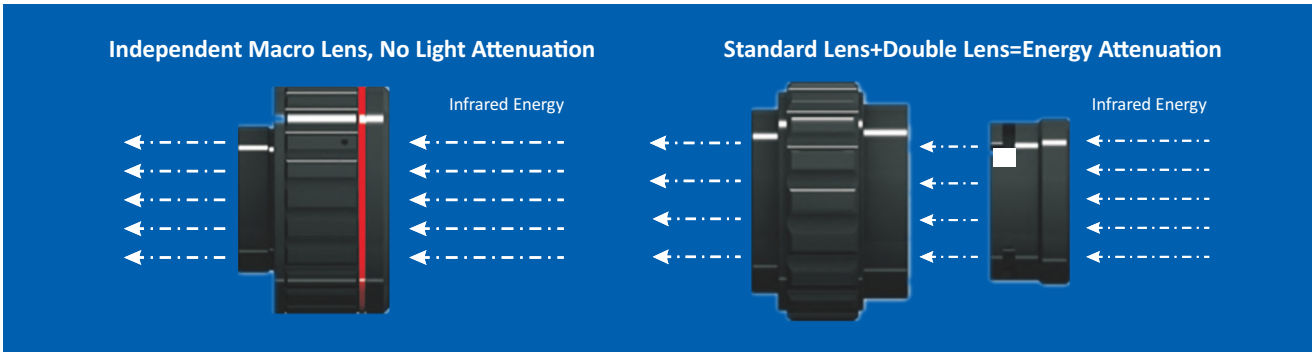
Support picture-in-picture (PIP) and picture fusion function; inspect the temperature of a specific area.

Support Picture-In-Picture And Picture Fusion Function

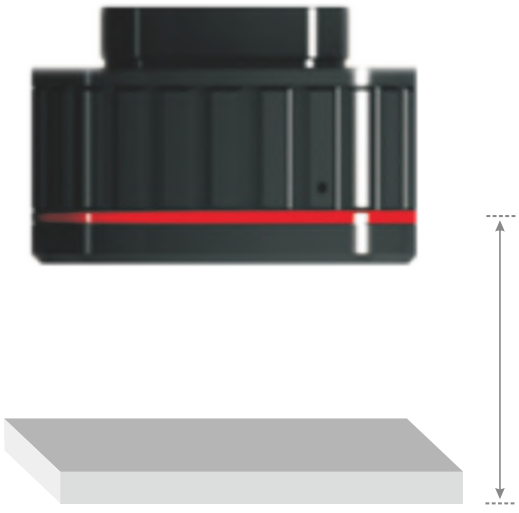
R&D Macro Lens = Independent Lens + Independent Calibration

OMEGA TI-120 Series Thermal Camera Is Capable of 50µm Micro Temperature Distribution Measurement.

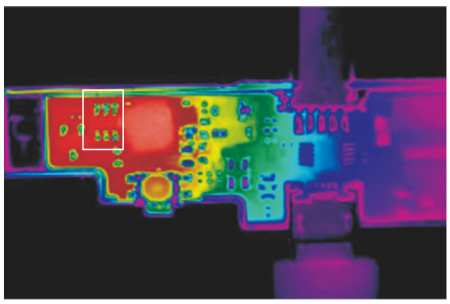
- **Independent Macro Lens:** No energy attenuation to ensure thermal image quality; while standard lens plus magnification lens increase optical attenuation, reducing the image quality.
- **Independent Lens Calibration:** OMEGA's original macro lens is temperature-calibrated in a one-on-one manner with the host thermal camera; temperature accuracy is guaranteed. The size of the chip in the white box is about 3mmx1.5mm.



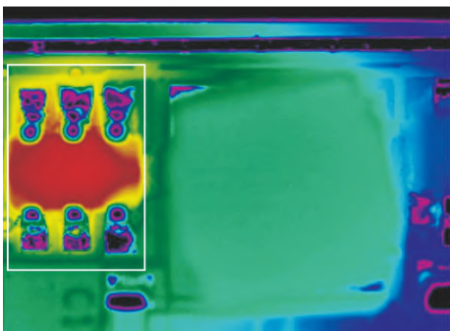
Macro Lens Illustration



50µm Macro Lens Test Distance 43-55mm

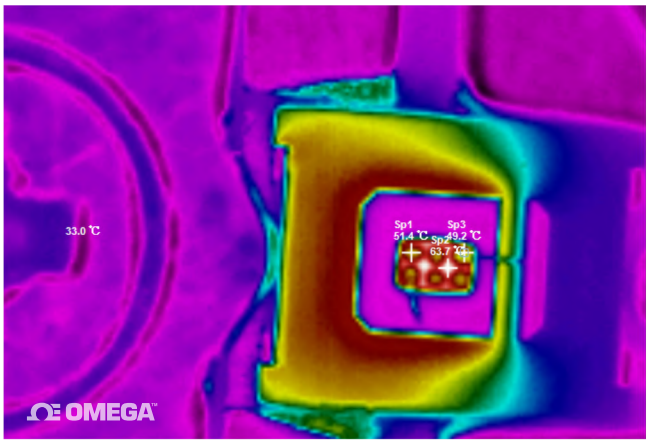


Standard Lens 15cm Test Distance
(in White Area, The Chip Size 3mmx1.5mm)



50µm Macro Lens

Typical Applications

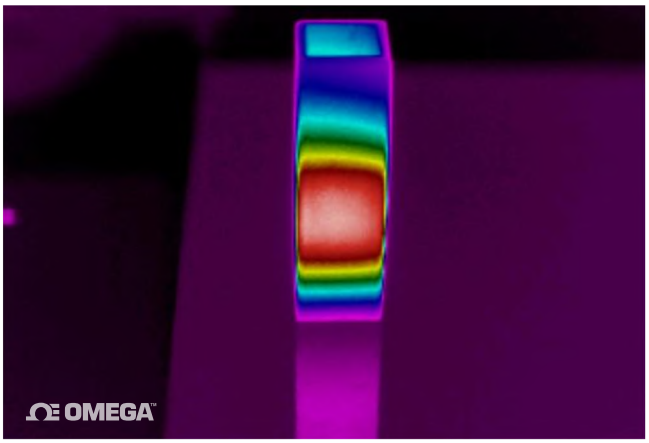


Electronics Industry

Unpacked Chip Internal Temperature Distribution Inspection

Test Difficulty: Single thermal image is not enough for most electronic thermal distribution analysis. It needs to capture the temperature change process and the entire experiment temperature changes, especially for devices as small as a chip.

Solution: For the test of small targets OMEGA TI-128 thermal camera with 50μm macro lens can be used. Through the OMEGA TI-120 Series software online model and TI Analyzer online analysis function, user can continuously detect the temperature changes and the recordings can also be analyzed later.

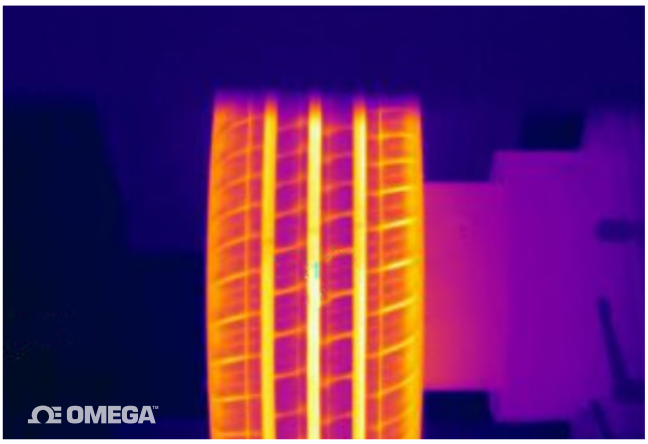


Biomedicine

Targeting Nanomaterials

Test Difficulty: Record the entire experimental process and compare the temperature changes of different test samples.

Solution: OMEGA TI-126 thermal camera with B3s universal test bench can be used to observe the temperature changes horizontally in material testing and laterally in vivo experiment. Online analysis function can record the entire experimental process in real-time, and use the superposition of the time-temperature curves for direct comparison of temperature changes between different test samples.

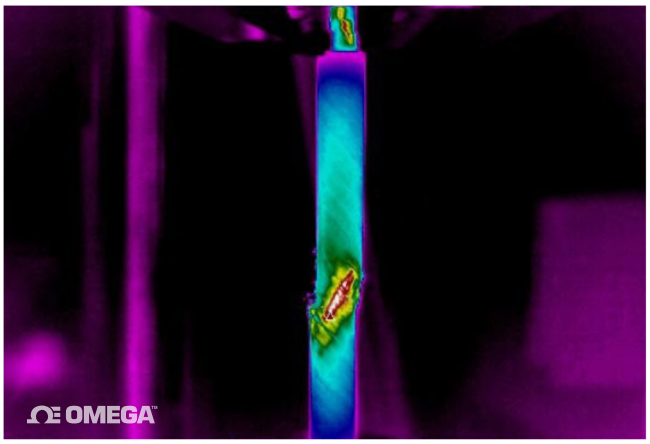


Automobile industry

Fatigue Life Test Of Tire

Test Difficulty: Tire durability test requires a long time monitoring, generally up to 7-10 days, and needs to record the entire process. Impact test requires a higher sampling frame rate.

Solution: OMEGA TI-120 Series thermal camera has bypass power supply design. It can use external power supply and won't lead to battery heating. The online analysis feature can be connected to PC software to record and analyze the data. User can customize the frame rate for impact test such as 30Hz high frame rate recording, and lower the frame rate in the durability test to reduce the amount of data. OMEGA TI-120 Series thermal imager supports 1TB single thermal video stream recording, suitable for the recording of long-term online test.



Test Of Material Characteristic

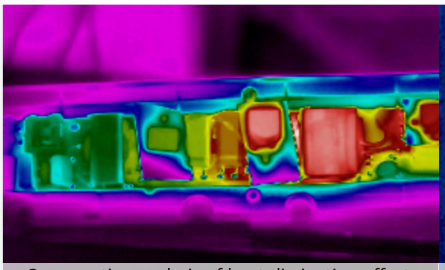
Carbon Fiber Fatigue Test

Test Difficulty: Capture the moment of fracture and record the temperature changes for post-test analysis.

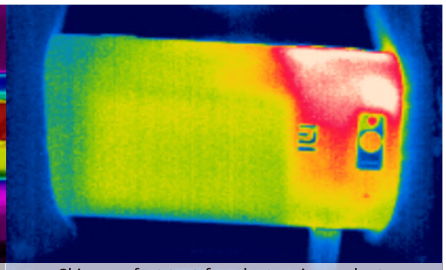
Solution: Rupture moment is a sudden occurrence behavior which can be captured through the long-term online detection. OMEGA TI-128 thermal imager with B3s universal test bench can free up the labor and achieve the online monitoring. Through the on-line analysis feature and recording function of TI Analyzer to record the entire temperature process, the trend analysis of temperature vs. time can intuitively show the temperature changes. And the temperature difference model is easy to analyze the temperature rise.

Other Applications

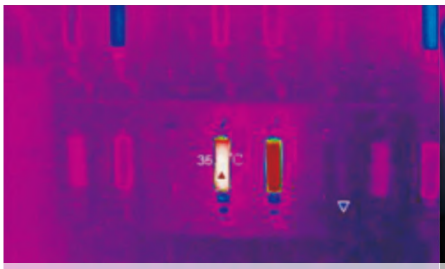
Heat Dissipation Study



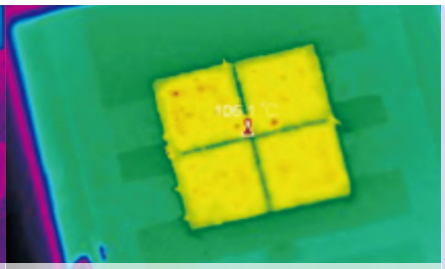
Comparative analysis of heat dissipation effect of different copper/aluminum material



Skin comfort test for electronic product network license



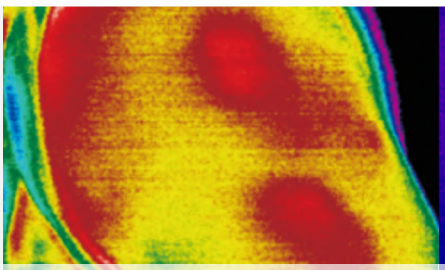
New energy battery



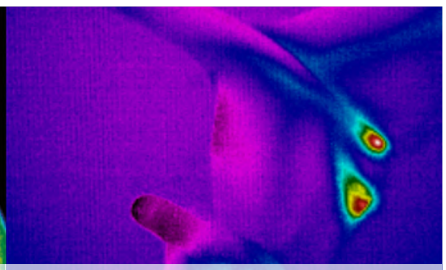
LED chip local hot spot

New Energy And Energy Saving

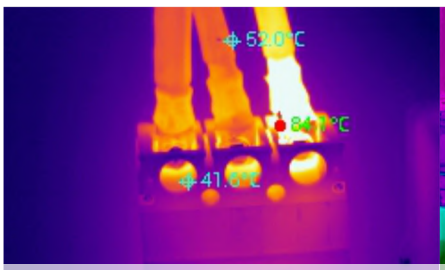
Biological Test



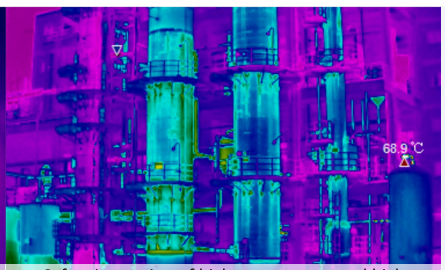
Inspection of muscle fatigue chronic stiff



Help Yangtze River finless porpoise protection



Distribution Cabinet Detection

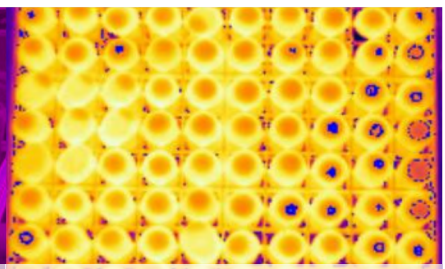


Safety inspection of high temperature and high pressure equipment

Maintenance Repair Operation

Other Studies

Distribution cabinet detection



Egg hatching status monitoring

Specifications

	OMEGA TI-128	OMEGA TI-126	OMEGA TI-125
Infrared Imaging			
IR Resolution	640 × 480 pixels (307,200 pixels) or 1280 x 960 w/ Super-Resolution	384 × 288 pixels	320 × 240 pixels
Field of View (FOV)	28.7°H × 21.6°V	28°H × 21°V	24°H × 18°V
Temperature Range	-20°C ~+650°C (-4°F~+1202°F)		
Minimum Focus Length	0.1m (Standard Lens)		0.15m (Standard Lens)
Spatial Resolution (IFOV)	0.78mRad, D:S 1282:1 (Std. Lens)		1.27mRad, D:S 787:1 (Std. Lens)
Thermal Sensitivity (NETD)	⩽0.05℃@30°C		⩽0.06°C @30°C
Measurement Accuracy	± 2℃ or ±2% whichever is greater @ Environment Temperature 10℃~35℃		
Focus	Manual		
Spectral Range	8~14μm		
Detector Type	Focal Plane Array (FPA) uncooled microbolometer		
Zoom	10X continuous digital zoom		8X continuous digital zoom
Image Processing			
Palettes	15 palette options (Gray White, Gray Red, Iron Red, Rainbow, etc.)		
Palette Switching	Tap palette icon		
Noise Calibration	Automatic noise calibration FFC / Manual noise calibration FFC		
Measurement And Analysis			
Correction Settings	Emissivity, reflected background temperature, relative humidity, ambient temperature, measuring distance, transmission		
Emissivity Adjustment	0.1~1.0		
Regional Emissivity Adjustment	Support, on smartphone and in software		
Automatic Capture of High, Low and Average Temperature	Support, on smartphone and in software		
Isotherm	Above / Below threshold		
ROI Measurement Modes	12 moveable spots 12 moveable area boxes (min/max) 3 lines (min/max) Emissivity set for each ROI		8 moveable spots 8 moveable area boxes (min/max) 1 line (min/max) Emissivity set for each ROI
Temperature Alarm	User-defined temperature threshold, audible and visual alarm of abo		ve/below temperature threshold
Image Format	Standard JPEG, including raw temperature data, radiometric		
Long-Time Online Measurement			
USB	Transfer fully-radiometric thermal video stream with all original temperature data of each pixel to PC, connect with mobile devices supporting OTG (On-The-Go host)		
Continuous Online Monitoring	1TB in software; 1,000 frames on smartphone		

	OMEGA TI-128	OMEGA TI-126	OMEGA TI-125
Professional Function			
Display Mode	Full screen thermal image, customer size/transparency/moveable dual vision fusion picture-in-picture (PIP)		
Image Saving Modes	Single thermal image / Thermal & digital mix image		
Take fully-radiometric Thermal Video Stream on Smartphone	Support, user-defined frame rate (up to 5 fps) or frame interval, up to 1,000 frames per video stream on smartphone		
Take fully-radiometric Thermal Video Stream on PC	Support 1TB in software		
Thermal Image Analysis on Smartphone	Support on site analysis		
Thermal Video Analysis on Smartphone	Support on site analysis		
Image Tagging / Labeling	Thermal image can be automatically labelled by scanning QR code or barcode		
Image Annotation	Voice / Text Memos		
Power Supply			
Battery Type	Rechargeable Lithium-ion		
Battery Operating Time	10+ hours		
Charging System	AC Power Adapter		
Charging Voltage	12V DC Charger		
Environment			
Operating Temperature	-20°C~+50°C (-4°F~+122°F)		
Storage Temperature	-20°C~+50°C (-4°F~+122°F)		
Humidity	< 90%RH		
Physical Parameters			
Enclosure Rating	IP40		
FCC Certification	CFR 47 Part 15.107 CFR 47 Part 15.109		
Tripod Mounting	UNC1/4''-20		
Weight	~615g		
Dimensions (LxHxW)	118×145×93.5mm		
Warranty	2 years		
Software And App			
• TI Analyzer,professional computer analysis software		• TI Link,smartphone App	
Standard Configuration			
• Thermal imaging camera (built-in battery) • Standard infrared lens • Lens protective case • Power adapter • USB to micro USB OTG cable (left angle / right angle)		• USB to Micro USB OTG cable • USB to Micro USB-C OTG cable • USB to USB cable • Hand wrist strap • Getting started manual (with warranty card) • Calibration certificate	
Optional Test Bench			
• OMEGA TI-B3s Universal test bench			

OMEGA TI-B3s Universal R&D Test Bench

R&D Test Bench

OMEGA TI-B3s (360 degree orientation)

About OMEGA™

Since its inception in 1962, OMEGA has grown from manufacturing a single product line of thermocouples to an established global leader in the technical marketplace, offering more than 100,000 state-of-the-art products for measurement and control of temperature, humidity, pressure, strain, force, flow, level, pH and conductivity. OMEGA also provides customers with a complete line of data acquisition, electric heating and custom engineered products.

For over four decades our handbooks and e-commerce site have served as valuable reference tools for engineers around the world. And though we are an established direct-marketing pioneer, our people, facilities and superior client services go well beyond the handbooks and high-value articles.

It is our commitment to quality instrumentation and exceptional customer service that has remained the cornerstone of our success. OMEGA´s priority is clear. Our facilities exist to "facilitate" solutions to your needs.

Omega Engineering is part of Spectris plc, a leading supplier of productivity-enhancing instrumentation and controls. Headquartered in Egham, Surrey, United Kingdom, Spectris is listed on the London Stock Exchange (LSE: SXS) and had sales of £1,526 million in 2017. The company employs around 10,000 people located in more than 30 countries.

The Company's products, technologies and services help customers to improve product quality and performance, improve core manufacturing processes, reduce downtime and wastage and reduce time to market. Its global customer base spans a diverse range of end-user markets.

Spectris operates across four business segments which reflect the applications and industries it serves: Materials Analysis, Test and Measurement, In-line Instrumentation and Industrial Controls.

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TI-19-120-01-US