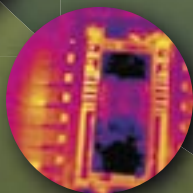
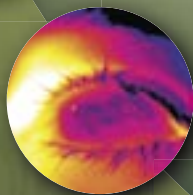
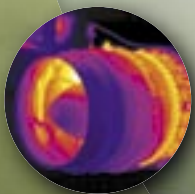


ThermaCAM™ SC640

Portable infrared camera for scientific applications
with extremely high image quality:
640 x 480 pixels



ThermaCAM™ SC640

Infrared thermography for scientific applications
Unrivalled image quality: 640 x 480 pixels

The ThermaCAM SC640 is an infrared camera that will help scientists throughout the world solve their problems. Infrared thermography has proven to be an invaluable tool to solve a wide range of scientific questions and problems. Because of its non-destructive analysis capacities, thermography systems are an important instrument in a wide variety of Research and Development applications.

Thermography is the production of temperature calibrated infrared or heat pictures by utilizing an infrared camera. Based on these thermal images, accurate temperature measurements can be made to detect even the smallest temperature differences. Numerous researchers, active either in product development, applied or fundamental research, have discovered that infrared is a reliable and quick non-destructive method to help them in their daily work.

Advantages of Infrared

Heat patterns are very difficult to predict. This means that it is not always possible to know where to attach the thermocouples necessary to make accurate measurements and effectively evaluate heat dissipation.

Furthermore, since the thermocouple needs to be in contact with the component to be tested, it can influence the results of the measurement. The ThermaCAM SC640 has the advantage that it produces very comprehensive images in a non-contact mode. Even if it is not clear where the exact location of the problem might be, it

will clearly show up, sometimes at the most unexpected location, in the easy-to-understand, crisp 640 x 480 pixels, infrared image.

New infrared technology

The ThermaCAM SC640 can produce very high-resolution images (640 x 480 pixels) so that crisp thermal images can be taken of even the smallest of objects in a non-contact mode. The ThermaCAM SC640, is especially designed for the most demanding scientific applications and detects the smallest temperature differences over a very wide temperature range. Frames can be captured, and stored, in real-time, at high frame

rates allowing for detailed and extensive analysis of highly dynamic events typically found in R&D environments.

Unlimited applications

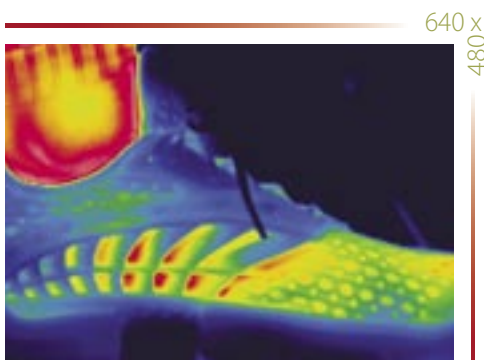
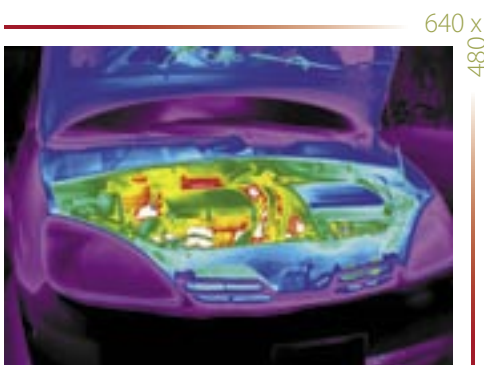
Scientific applications for infrared thermography are numerous and can be found in the most diverse markets. FLIR Systems ThermaCAM SC640 provides the ability to view thermal distribution palettes in real-time for products as small as hybrid IC circuits and as large as jet or rocket engines.



Outstanding image quality (640 x 480 pixels). See the smallest scientific details in the highest possible resolution.

Perfect image quality

See small details - make fast decisions



With the ThermaCAM SC640, FLIR Systems offers you the best. An infrared image of 640 x 480 pixels offers no less than 4 times higher resolution than a 320 x 240 pixels image.

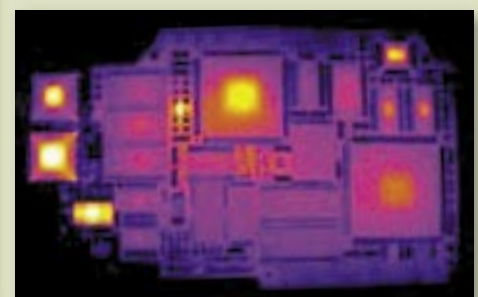
Research and development

ThermaCAM SC640 is a full featured infrared camera.

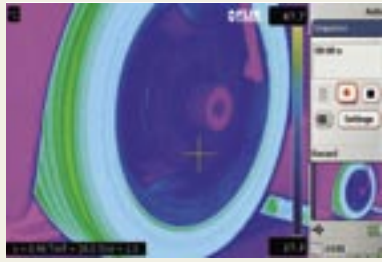
The ThermaCAM SC640 is an excellent tool for R&D related applications. Thanks to its 640 x 480 image resolution you can see the smallest of details. The FireWire interface allows to feed infrared data, radiometric or RAW data directly into ThermaCAM Researcher™ software for real-time analysis of the captured images. Furthermore, real-time radiometric sequences can be stored on high capacity (1 GB) SD-cards.



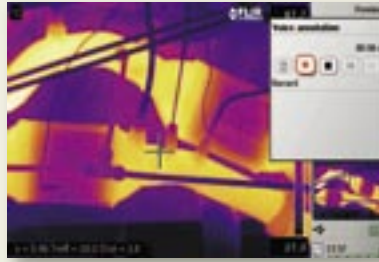
Verification of printed circuit boards



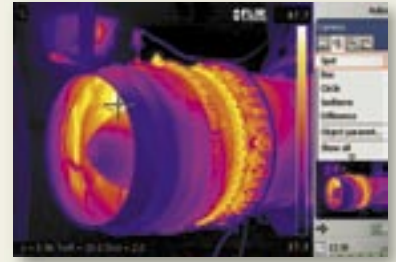
Efficient menu controls



Store infrared video sequences



Voice and text annotations



Flexible JPEG image storage

See it! Every possible way!

Multi-angle handle with integrated buttons allows for easy operation

No matter what, no matter where, no matter how. The ThermoCAM SC640's turnable control grip allows you to move the camera in the most comfortable position. The buttons and joystick to control the ThermoCAM SC640 are integrated in this handle and stay always right underneath your fingertips. Just 2 buttons and a joystick control the entire ThermoCAM SC640 and allow point-and-shoot operation. Functions like auto-focus, freezing and storing of images, are just a button away.

Tiltable viewfinder

In bright light conditions, look at the object through the high resolution color viewfinder and see a bright infrared image. Adjust the viewfinder to the best angle.

Store infrared video sequences

With the ThermoCAM SC640 you can record full radiometric video sequences on a removable SD card. A considerable advantage when you are inspecting moving targets. In-camera

play-back allows you to view recordings, without the need for a PC. Recorded data can also be transferred into ThermoCAM Researcher for further analysis.

Video streaming of non-radiometric infrared sequences

Available directly from the camera connected to your PC. Both Firewire and USB connections can be used.

Ergonomic portable and rugged magnesium housing

The ThermoCAM SC640 is not only very user-friendly but also extremely light and easy to carry. Including battery, the P640 weighs only 1,7 kgs. It is designed for users that need to carry the camera around several hours a day.

The ThermoCAM SC640 is a professional instrument designed to stand tough handling in field use. The strong magnesium housing protects its vital internal core from shocks and vibrations. Dust- and watersplash proof it meets IP54 standard. Use it the harshest environments.



Tiltable viewfinder



Laser pointer, Digita Camera, IR lens



Multi-angle handle with integrated buttons



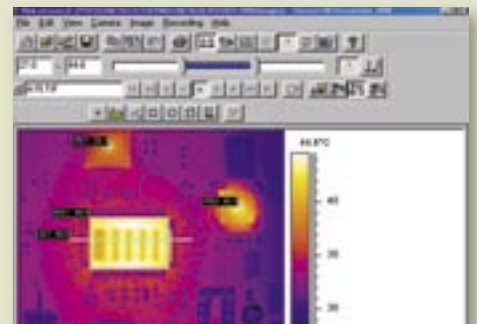
Menu control buttons

Making the difference!

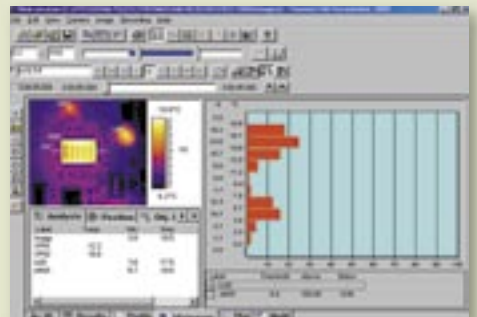
Customized software makes the SC640 even more efficient: ThermoCAM™ Researcher™ for the R&D professional:

FLIR Systems ThermoCAM Researcher allows plug and play. It is very easy to use for static or real-time image analysis. It contains powerful measurement and analysis functions for extensive temperature analysis, including isotherms, line profiles, area histograms, image subtraction capability and many more. Windows® based and extremely versatile, ThermoCAM Researcher adds a new level of power and flexibility to thermal imaging by offering extensive analysis capabilities as well as high speed data acquisition.

Researcher seamlessly stores, retrieves and analyses IR images and data directly from your IR camera allowing in-depth and precise evaluation of thermal performance.



ThermoCAM Researcher measurement tools allow extensive thermal analysis.



Histogram chart shows relative distribution of temperature within a user-defined area.

Specifications ThermoCAM™ SC640

IMAGING PERFORMANCE Thermal: Field of view/min focus distance Spatial resolution (IFOV) Thermal sensitivity Image frequency Focus Electronic zoom / pan function Detector type Spectral range Digital image enhancement Visual: Built-in digital video Standard lens performance	24°x18° /0.3 m 0.65 mrad 60mK at 30°C 30 Hz non-interlaced Automatic or manual 1 - 8 x continuous, including pan function Focal Plane Array (FPA), uncooled microbolometer 640 x 480 pixels 7.5 to 13µm Normal and enhanced 1.3 Mpixel, full color / built-in Target Illuminator / exchangeable lens f=8 mm / FOV 32°
IMAGE PRESENTATION Video output Viewfinder External display	RS170 EIA/NTSC or CCIR/PAL composite video, IEEE-1394 FireWire, USB Built-in, tilttable, high-resolution color viewfinder (800 x 480 pixels) Built-in 5.6" LCD (1024 x 600 pixels)
MEASUREMENT Temperature range Accuracy Measurement mode Menu controls Alarm Functions Set-up controls Atmospheric transmission correction Optics transmission correction Emissivity correction Reflected ambient temperature correction External optics/window correction	-40°C to +1,500°C, in 3 ranges; up to + 2000°C, optional ±2°C, ±2% of reading Spots/Areas (Boxes, Circles), Isotherms (above, below, interval), Delta T 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 Automatic alarm on any selected measurement function, audible/visible alarm above/below, Date/time, Temperature °C/°F, language Automatic, based on inputs for distance, atmospheric temperature and relative humidity Automatic, based on signals from internal sensors Variable from 0.01 to 1.0 or select from listings in pre-defined materials list Automatic, based on input of reflected temperature Automatic, based on input of optics/window transmission and temperature
IMAGE STORAGE Type File formats - Thermal File formats - Visual Voice annotation of images Text annotation of images	Removable SD-card (1 GB) Built-in RAM memory for radiometric real-time sequence storage Standard JPEG, 14 bit measurement data included Standard JPEG, automatically associated with corresponding thermal image / possibility for visual marker 30 sec. of digital voice "clip" stored together with the image wired headset; Predefined text selected and stored together with the image
VIDEO STORAGE Type	Recording of fully radiometric IR-video clips in camera, transferable to SD-card Recording of MPEG-4 non-radiometric video to SD-card
VIDEO STREAMING Type	Fully radiometric real-time 14-bit digital IR-video using FireWire MPEG-4, IP-link using FireWire or USB
LENSES (OPTIONAL) Field of view/min focus distance Lens identification	12° x 9° / 0.9m telelens 45° x 34° / 0.1m wide angle lens Close-up 50µm 32 mm x 24 mm / 75 mm Automatic
LASER POINTER Classification Type	Class 2 Semiconductor AlGaInP Diode Laser: 1mW/635 nm red
BATTERY SYSTEM Type Operating time Charging system External power operation Power saving	Li-Ion, rechargeable, field replaceable 3 hours continuous operation in camera (AC adapter or 12 V from car) or 2 bay intelligent charger AC adapter 110/220 V AC, 50/60 Hz or 12 V from car (cable with Std plug: optional) Automatic shutdown and sleep mode (user selectable)
ENVIRONMENTAL SPECIFICATION Operating temperature range Storage temperature range Humidity Encapsulation Shock Vibration	-15°C to +50°C -40°C to +70°C Operating and storage 10% to 95%, non-condensing IP 54 IEC 529 Operational: 25G, IEC 68-2-29 Operational: 2G, IEC 68-2-6
PHYSICAL CHARACTERISTICS Weight Size Tripod mounting	1.7 kg incl. battery 120 mm x 145 mm x 220 mm 1/4" - 20
INTERFACES FireWire USB IrDA SD-card (2)	IEEE-1394 FireWire output (real-time radiometric or non-radiometric video / filetransfer to PC) Image (thermal and visual), measurement, voice and text transfer to PC Wireless communication I/O slot; storage slot



FLIR Systems AB
 World Wide Thermography Center
 Rinkebyvägen 19 - PO Box 3
 SE-182 11 Danderyd
 Sweden
 Tel: +46 (0)8 753 25 00
 Fax: +46 (0)8 755 07 52
 e-mail: sales@flir.se
 www.flir.com

FLIR Systems Ltd.
 United Kingdom
 Tel: +44 (0)1732 220 011
 e-mail: sales@flir.uk.com

FLIR Systems Co. Ltd.
 Hong Kong
 Tel: +852 27 92 89 55
 e-mail: flir@flir.com.hk

FLIR Systems GmbH
 Germany
 Tel: +49 (0)69 95 00 900
 e-mail: info@flir.de

FLIR Systems Sarl
 France
 Tel: +33 (0)1 41 33 97 97
 e-mail: info@flir.fr

FLIR Systems S.r.l.
 Italy
 Tel: +39 02 99 45 10 01
 e-mail: info@flir.it

FLIR Systems AB
 Belgium
 Tel: +32 (0)3 287 87 10
 e-mail: info@flir.be

www.flir.com