FLIR SC305

Speed up your design with Infrared

The SC305 is designed from the ground-up to deliver the accurate thermographic imaging and repeatable temperature measurement necessary in demanding science and R&D applications. Each crisp thermal image is built from over 76,000 individual picture elements that are sampled by the camera's on-board electronics and firmware. SC305 features include:

Key features and Benefits:

- **Uncooled Microbolometer Detector** – Maintenance-free and provides excellent long wave imaging performance

- **Optics and Focus** – standard built-in 25° lens with optional 6°, 15°, 45°, and 90° lenses available to achieve other fields of view; manual and auto focus standard

- **Microscopy and Close-up Measurement** – Optional 100 µm, 50 µm, and 25 µm microscope optics and microscope stand are available for small target imaging and measurement

- **Precise Timing and Control** – Optically-isolated digital I/O connections eliminate communication latencies with digital in and out for shutter disable and program control along with a V-sync connector for triggering and synchronization

- **Plug-and-Play Compatibility** – Ideal system integration solution with universal plug and play and GigE Vision Control protocols. The camera can be fully configured from the PC, allowing command, control, and collection of full frame data from the camera in real time.

- **Versatility** – Compact, rugged, and lightweight with straightforward 3-sided mounting feature that permits quick installation and easy movement for new application requirements

- **Fast Data Transfer** – Equipped with an RJ-45 gigabit Ethernet connection that supplies a 16-bit 320 x 240 images at rates as high as 60 Hz along with linear temperature data; GenICam and GigE Vision Compliant

- **Tailored to Your Application** – FLIR Systems offers a complete line of accessories including optics, enclosures, data systems, and software tools to suit the most demanding applications.

Typical applications:

The FLIR SC305 camera is an excellent choice for those who want to work in R&D but do not need the highest frame rates or a resolution higher than 320 x 240 pixels. For those who need to use the camera in R&D, it is highly recommended to use the FLIR ResearchIR software.
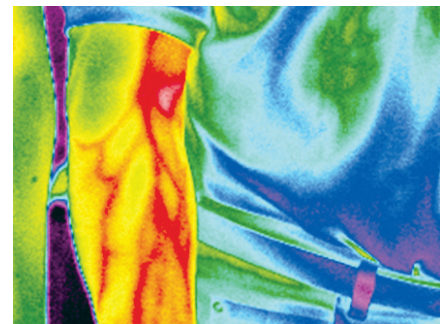
320 x 240 pixels IR resolution and thermal sensitivity of 50mK provides optimized image details and temperate difference information.
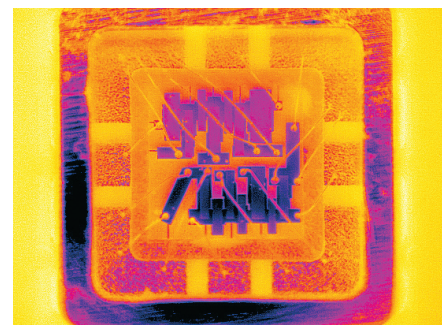
Infrared measurement allows you to see a thermal problem and measure temperature over surfaces accurately.

FLIR SC305 Technical Specifications

Imaging and optical data	
Field of view (FOV)	25º x 18.8º
Minimum focus distance	0.4 m (1.31ft.)
Focal Length	18 mm (0.7 in.)
Spatial resolution	1.36 mrad
Lens identification	Automatic
F-number	1.3
Thermal sensitivity / NETD	<0.05ºC @ +30ºC (+86ºF) / 50 mK
Image frequency	9 Hz
Focus	Automatic or manual (built in motor)

Detector data	
Detector type	Focal Plane Array (FPA), uncooled microbolometer
Spectral range	7.5 - 13 µm
IR resolution	320 x 240 pixels
Detector pitch	25 µm
Detector time constant	Typical 12ms

Measurement	
Object temperature range	-20°C to +120°C 0 to +350°C
Accuracy	±2°C or ±2% of reading

Measurement Analysis	
Atmosphere transmission correction	Automatic, based on inputs for distance, atmospheric temperature and relative humidity
Optics transmission correction	Automatic, based on signals from internal sensors
Emissivity correction	Variable from 0.01 to 1.0
Reflected apparent temperature correction	Automatic, based on input of reflected temperature
External optics / windows correction	Automatic, based on input of optics / window transmission and temperature
Measurement corrections	Global object parameters

Ethernet	
Ethernet	Control and image
Ethernet, type	Gigabit Ethernet
Ethernet, standard	IEEE 802.3
Ethernet, connector type	RJ-45
Ethernet, communication	TCP/IP socket-based FLIR proprietary and GenICam protocol
Ethernet, image streaming	16-bit 320 x 240 pixels @ 9 Hz - Signal linear - Temperature linear - Radiometric GigE Vision and GenICam compatible
Ethernet, protocols	TCP, UDP, SNTP, RTSP, RTP, HTTP, ICMP, IGMP, ftp, SMTP, SMB (CIFS), DHCP, MDNS (Bonjour), uPnP

Digital input / output	
Digital input, purpose	Image tag (start, stop, general), Image flow ctrl. (Stream on/off), Input ext. device (programmatically read)
Digital input	2 opto-isolated, 10-30 VDC
Digital output, purpose	Output to ext. device (programmatically set)
Digital output	2 opto-isolated, 10-30 VDC, max 100 mA
Digital I/O, isolation voltage	500 VRMS
Digital I/O, supply voltage	12/24 VDC, max 200 mA
Digital I/O, connector type	6-pole jackable screw terminal

Power system	
External power operation	12/24 VDC, 24 W absolute max
External power, connector type	2-pole jackable screw terminal
Voltage	Allowed range 10-30 VDC

Environmental data	
Operating temperature range	-15ºC to +50ºC
Storage temperature range	-40°C to +70°C
Humidity (operating and storage)	IEC 60068-2-30/24 h 95% relative humidity +25ºC to +40ºC
EMC	• EN 61000-6-2:2001 (Immunity) • EN 61000-6-3:2001 (Emission) • FCC 47 CFR Part 15 Class B (Emission)
Encapsulation	IP 40 (IEC 60529)
Bump	25 g (IEC 60028-2-29)
Vibration	2 g (IEC 60068-2-6)

Physical data	
Weight	0.7 kg
Camera size (L x W x H)	170 x 70 x 70 mm
Tripod mounting	UNC1/4"-20 (on three sides)
Base mounting	2 x M4 thread mounting holes (on three sides)
Housing material	Aluminium

Scope of delivery

Hard transport case or cardboard box
Infrared camera with lens
Calibration certificate
Ethernet™ cable
Mains cable
Power cable, pig-tailed
Power supply
Printed Getting Started Guide
Printed Important Information Guide
User documentation CD-ROM
Utility CD-ROM
Warranty extension card or Registration card

Optional accessories

IR lens f = 30 mm, 15° incl. case
IR lens f = 10 mm, 45° incl. case
Close-up 4× (100 µm) incl. case
Close-up 2× (50 µm) incl. case
Lens 76 mm (6°) with case and mounting support for A/SC3XX
Lens 4 mm (90°) with case and mounting support for A/SC3XX
Close-up 1× (25 µm) incl. case and mounting support for A/SC3XX
High temp. option +1200°C/+2192°F for FLIR T/B2XX to T/B4XX and A/SC3XX Series
Power supply for A/SC3XX and A/SC6XX
Power cord EU
Power cord US
Power cord UK
Ethernet cable CAT-6, 2m/6.6 ft.
Power cable, pig-tailed
Hard transport case for A/SC3XX and A/SC6XX series
Delivery Box for A/SC3XX

Recommended softwares for documentation and analysis:

- ThermoVision (TM) Systems Developers Kit
- FLIR ResearchIR
- FLIR QuickPlot

www.flir.com/thg