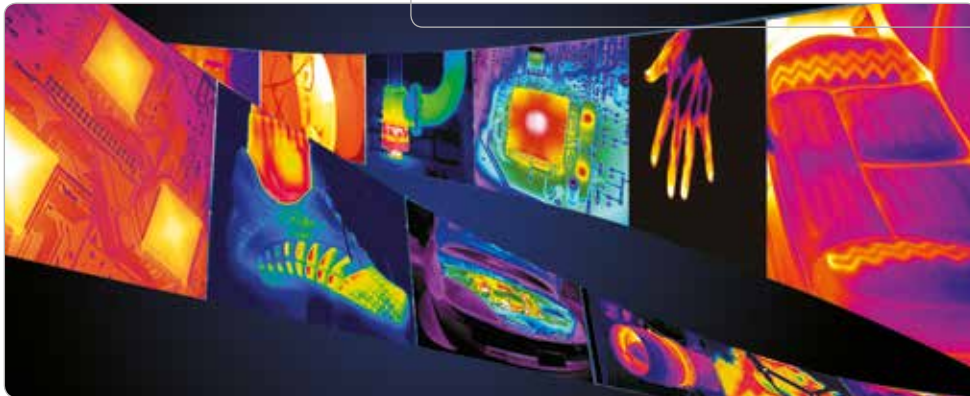


Compact thermal imaging
cameras for Research &
Development and Science



R&D Departments

Universities



FLIR SC35 / SC15 / SC5 packs

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Compact thermal imaging camera packs for Research & Development and Science

Thermal imaging cameras can be used for a wide variety of R&D applications. Until today using a thermal imaging camera was often the privilege for large R&D departments. With the extremely affordable SC35 / SC15 and SC5 packs FLIR Systems is now bringing the advantages of thermal imaging to the test bench of every R&D engineer.

FLIR SC35 / SC15 and SC5 packages are not only extremely affordable. They contain both the hardware and software for analyzing and verifying your R&D projects. With the FLIR SC35 / SC15 and FLIR SC5 packs you will be able to visualize temperature and to measure temperatures in a non-contact mode.



Ax5 camera on table stand, using the goose neck mount, which is included in the SCxx packs.



Extremely affordable

The FLIR A5sc comes at an extremely affordable price. It is the ideal tool for putting thermal imaging at work in a R&D and Science environment.



Extremely compact

All models are extremely compact. They can easily be integrated in any environment.



Choice of image quality

The FLIR A35sc produces crisp thermal images of 320 x 256 pixels. Users that do not need this high image quality for their application can choose for the FLIR A15sc which produces thermal images of 160 x 128 pixels or for the FLIR A5sc which produces thermal images of 80 x 64 pixels.



GigE Vision™ standard compatibility

GigE Vision is a new camera interface standard developed using the Gigabit Ethernet communication protocol. GigE Vision is the first standard to allow for fast image transfer using low cost standard cables even over long distances. With GigE Vision, hardware and software from different vendors can inter-operate seamlessly over GigE connections.



GenICam™ protocol support

The goal of GenICam is to provide a generic programming interface for all types of cameras. Regardless of interface technology (GigE Vision, Camera Link, 1394 DCAM, etc.) or features implemented, the Application Programming Interface (API) will always be the same. The GenICam protocol also makes it possible to use third party software with the camera. GenICam makes the FLIR A35sc plug-and-play when used with software packages such as IMAQ Vision and Halcon.



Power over Ethernet (PoE)

Communication and power supplied with only one cable.



Synchronization

Possible to configure one camera to be master and others to be slave(s) for applications that call for more than one camera to cover the object or for stereoscopic applications.



General Purpose Input/Output (GPIO)

One output that can be used to control other equipment and one input to read the status from the same equipment.



Wide temperature range

The FLIR Axxsc-Series visualizes temperatures between -40°C and +550°C.



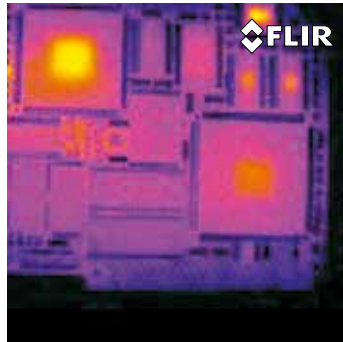
High sensitivity < 50 mK

< 50 mK thermal sensitivity captures the finest image details and temperature difference information.

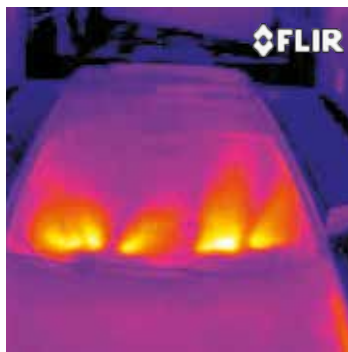




Verification of PCB.



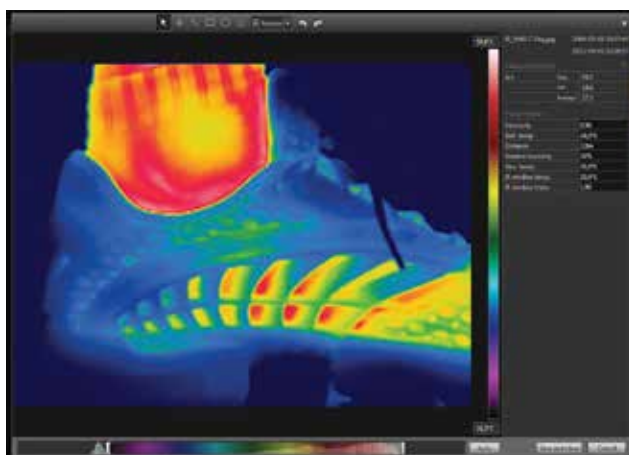
Development of car windscreen defrosting.



Each FLIR SCxx pack contains a thermal imaging camera, hard case, goose neck with foot and 2 cable straps, 2 Ethernet cables, base mount, focusing tool, PoE injector, and a power cable.

FLIR Tools+ software included

FLIR Tools+ software is included with every SCxx pack. The FLIR thermal imaging cameras included in the FLIR SC packs work seamlessly together with FLIR Tools+. It allows for viewing, recording and analyzing thermal images and includes functions such as time versus temperature plots.



Available models

	FLIR A35 sc	FLIR A15 sc	FLIR A5 sc
Resolution	320 x 256 pixels	160 x 128 pixels	80 x 64 pixels
Available lenses	Focal length 9 mm	Focal length 9 mm	Focal length 5 mm

FLIR A35 sc / A15 sc / A5 sc



Technical specifications

Imaging and optical data	FLIR A35sc	FLIR A15sc	FLIR A5sc
IR resolution	320 x 256 pixels	160 x 128 pixels	80 x 64 pixels
FOV (Field of view) / Focal length	48° (H) x 39° (V) with 9 mm lens	48° (H) x 39° (V) with 9 mm lens	44° (H) x 36° (V) with 5 mm lens
Spatial resolution (IFOV)	2.78 mrad for 9 mm lens	5.56 mrad for 9 mm lens	10.0 mrad for 5 mm lens

Detector data	FLIR A35sc	FLIR A15sc	FLIR A5sc
Detector pitch	25µm	50µm	50µm

General

Imaging and optical data	
Thermal sensitivity/NETD	< 0.05°C @ +30°C (+86°F) / 50 mK
Minimum focus distance	Fixed
F-number	1.25
Image frequency	60 Hz
Focus	Fixed
Detector data	
Focal Plane Array (FPA) / Spectral range	Uncooled VOX microbolometer / 7.5–13 µm
Detector time constant	Typical 12 ms
Measurement	
Object temperature range	–40°C to +160°C (–40 to 320°F) / –40°C to +550°C (–40 to +1022°F)
Accuracy	± 5°C or ± 5% of reading
Ethernet	
Ethernet	Control and image
Ethernet, type	Gigabit Ethernet
Ethernet, standard	IEEE 802.3
Ethernet, connector type	RJ-45
Ethernet, communication	GigE Vision ver. 1.2 Client API GenICam compliant
Ethernet, image streaming	14-bit signal linear/ DDE, GigE Vision and GenICam compatible
Ethernet, power	Power over Ethernet, PoE IEEE 802.3af class 0 Power
Ethernet, protocols	TCP, UDP, ICMP, IGMP, DHCP, GigE Vision
Digital input/output	
Digital input, purpose	General purpose
Digital input	1× opto-isolated, "0" < 2, "1" = 2–40 VDC
Digital output, purpose	General purpose Output to ext. device (programmatically set)
Digital output	1× opto-isolated, 2–40 VDC, max 185 mA
Digital I/O, isolation voltage	500 VRMS
Digital I/O, supply voltage	2–40 VDC, max 200 mA
Digital I/O, connector type	12-pole M12 connector (shared with Digital Synchronization and External power)
Synchronization In, purpose	Frame sync In to control camera
Synchronization In	1×, non-isolated
Synchronization In, type	LVC Buffer @3.3V, "0" < 0.8 V, "1" > 2.0 V.
Synchronization Out, purpose	Frame sync Out to control another Ax5 camera
Synchronization Out	1×, non-isolated
Synchronization Out, type	LVC Buffer @ 3.3V, "0" = 24 MA max, "1" = –24 mA max.
Digital Synchronization, connector type	12-pole M12 connector (shared with Digital I/O and External power)
Power system	
External power operation	12/24 VDC, < 2.5 W absolute max
External power, connector type	12-pole M12 connector (shared with Digital I/O and Digital Synchronization)
Voltage	Allowed range 10–30 VDC
Environmental data	
Operating temperature range	–15°C to +50°C (+5°F to +122°F)
Storage temperature range	–40°C to +70°C (–40°F to +158°F)
Humidity (operating and storage)	IEC 60068-2-30/24 h 95% relative humidity +25°C to +40°C (+77°F to +104°F)
EMC	EN 61000-6-2 (Immunity) EN 61000-6-3 (Emission) FCC 47 CFR Part 15 Class B (Emission)
Encapsulation	IP 40 (IEC 60529)
Bump	25 g (IEC 60068-2-29)
Vibration	2 g (IEC 60068-2-6)
Physical data	
Weight	0.2 kg (0.44 lb.)
Camera size (L × W × H)	106 × 40 × 43 mm (4.2 × 1.6 × 1.7 in.)
Tripod mounting	Optional with Accessory T198349, Base support
Base mounting	4 × M3 thread mounting holes (bottom)
Housing material	Magnesium and aluminum
Scope of delivery	
Packaging, contents	Thermal imaging camera with lens, getting started guide, important information guide, user documentation CD-ROM, registration card, Tools+ (scratch card), hard case, goose neck+foot+2xcable straps, 2x ethernet cables, base mount, focusing tool, PoE Injector+mains cables



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