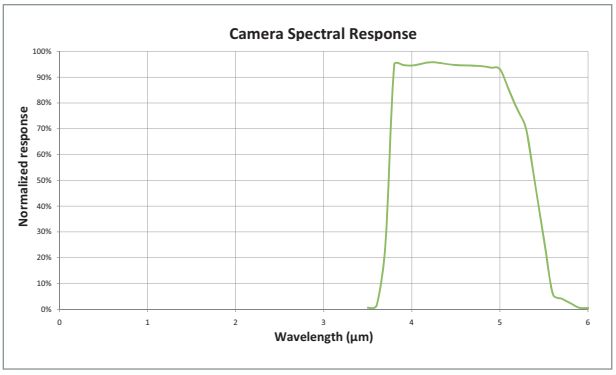
SC5600-M

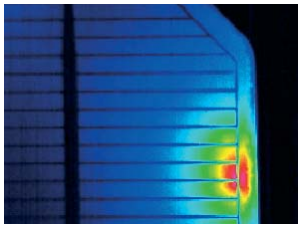
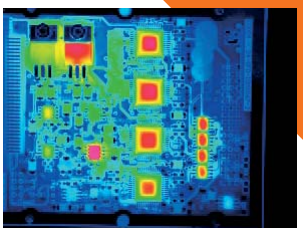
Large format infrared cameras for R&D and thermography applications



- Large focal plane array
- Uses fast high linearity ROIC
- Ultra high sensitivity typical 20 mK
- 3-5 µm spectral range
- 100 Hz full frame max frame rate
- Smart trigger and advanced capabilities
- Full radiometric capabilities
- Motorized filter wheel and focus control
- Plug & play interface with GigE / CAMLINK

The SC5600-M is the latest large format IR cooled camera featuring high resolution and high sensitivity.



1 Heat dissipation by conduction only, no fan = no dust inside
2 Temperature sensors for precise radiometric measurements
3 Smart trigger input ultra low jitter
4 High quality S-Video
5 GigE or Camlink interface transfer digital video at the faster frame rate
6 High performance InSb FPA
7 Long life durability cooler >8 000 hours MTBF
8 Rugged cast aluminium housing
9 Removable filter wheel
10 Build in lens motorized auto–focus

The SC5600-M is specifically designed for the most demanding users of IR technology, who want to perform thermal imagery at high spatial resolution with the highest sensitivity and accuracy at an affordable cost.

Ultra high frame rate obtained from the latest ROIC technology

Our 640x512 pixels format InSb focal plane array delivers an outstanding 100 Hz frame rate while keeping extraordinary linearity and sensitivity figures. The use of our latest read out integrated circuit technology provides low noise and high pixel rate without compromising sensitivity.

Frame rate, sub arrays windowing mode and smart trigger and advanced capabilities

The frame rate is programmable from 1 Hz to 100 Hz in full frame format. Sub array windowing modes are user friendly and flexible. Integration time is adjustable in 1 µs increments. The smart external triggering feature allows synchronization of the image capture to the most fleeting of events.

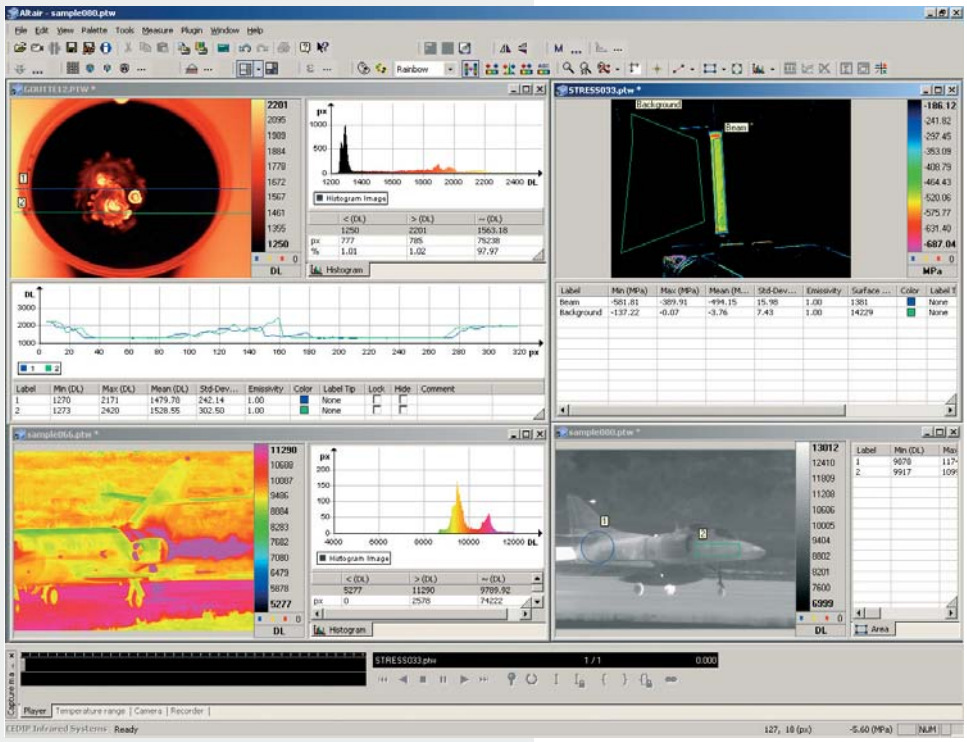
Plug & Play interfaces

The SC5600-M is truly plug & play using either GigE or CAMLINK interfaces to transmit both commands and full dynamic range digital video. Using the CAMLINK interface gives access to third party off the shelf frame grabber cards.

SC5600-M and ALTAIR software provide outstanding recording capabilities and radiometric performances.

Plug & play interfaces

The SC5600-M is fully compatible with ALTAIR software for digital image recording and radiometric measurement even at full frame rate. The CAMLINK output of the camera allows transference of images at 40 MHz pixel rate and full 14 bits dynamic range. Advanced image analysis features and functionalities dedicated to thermal measurements are standard.



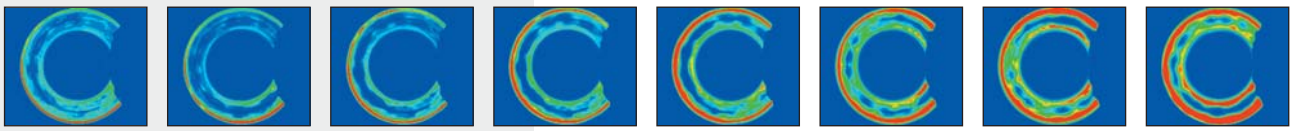
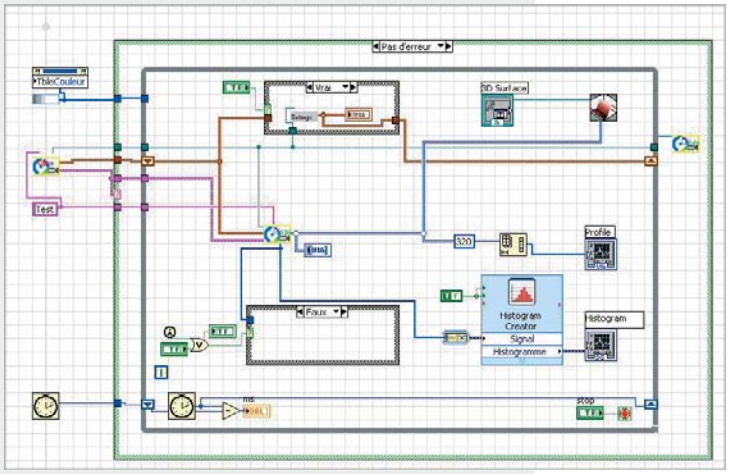


Image sequence of a brake disks study taken at 100 frames per seconds.



For users who want to interface the camera with their own experiments, we offer a complete Labview or C++ driver interface for controlling the camera features, acquiring and processing images.

SC5600-M Large format infrared cameras for R&D and thermography applications

Feature List for SC5600-M	
Sensor type	InSb
Waveband	3 - 5 µm
Pixel resolution	640 x 512
Pitch	15 x 15 µm
NETD	< 25 mK (20 mK typical)
Cooler	Close-cycle (rotary) stirling cooler
Max frame rate (full frame)	100 Hz
Sub array windowing	Random size arbitrary location (min 16x4)
Integration time range	3 - 20 000µs
Frame rate in subwindow mode	3 400 Hz with 128x8 pixel
Lens	27 mm (20x16 deg FOV) lens w/ bayonet front ring for accessory lenses
Optical interface	Bayonet
Field of view	20° x 15°
Filter wheel	4 slots for 1" filter 1 mm thick
Analogue video	S-Video and Composite, PAL (50 Hz) or NTSC (60 Hz)
Digital Video	GigE or Camlink
Trigger input	LVTTL software selectable
Trigger jitter	< 300 ns
Temperature calibration range	-15 °C to 3000 °C in single ranges or in extended mode
Temperature measurement accuracy	± 1°C or ± 1 %
Analog signals	1 x (-5 to 5 V) + 2 x (0 to 10 V)
CNUC™ / Hypercal™	Yes

Physical specifications	
Size (LxWxH)	320 x 141 x 159 mm
Weight	3.8 kg
Operational temperature	-20 °C to +55 °C
Shock	Operational 25 G, IEC 68-2-29
Vibration	Operational 2 G, IEC 68-2-26
Power supply	12 VDC
Power consumption (cooldown / stab)	30 W / 25 W

Optional lenses – Bayonet mount :

Focal Lens	FoV (°x°)	Minimal focus distance (mm)	Field of view @ minimal focus distance (mm)
W/O additional lens	20° x 16°	160	52 x 42
12 mm	42° x 34°	140	139 x 111
54 mm	10° x 8°	525	112 x 90

Lens	Magnification	Object distance (mm)	Field (mm)
G1	X1	17	9.6 x 7.2
G0.5	X0.5	46	19.2 x 14.4

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

FLIR Systems Sarl • France • Tel.: +33 (0)1 41 33 97 97 • e-mail: info@flir.fr
FLIR Systems AB • Belgium • Tel.: +32 (0)3 287 87 10 • e-mail: info@flir.be
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 Ltd. • United Kingdom • Tel.: +44 (0)1732 220 011 • e-mail: sales@flir.uk.com
FLIR Systems S.r.l. • Italy • Tel.: +39 02 99 45 10 01 • e-mail: info@flir.it