The FLIR X6800sc is a fast, highly sensitive MWIR camera designed for scientists, researchers, and engineers. With advanced triggering and on-camera RAM/SSD recording, this camera offers the functionality to stop motion on high speed events both in the lab and at the test range.

**High-Speed, High Sensitivity**

The X6800sc captures full 640 x 512 images at 502 frames per second, or up to 29,134 Hz with windowing. The cooled FLIR indium antimonide (InSb) detector offers a sensitivity of < 20 mK for the detection of subtle temperature changes at any frame speed.

**On-Camera Recording or Digital Streaming**

Save more than 51 seconds of full resolution data to on-camera RAM with a guarantee of zero dropped frames. Play back from RAM or save to the removable solid-state drive (SSD) in just 90 seconds, enabling you to quickly rearm for a new recording. The X6800sc also streams high speed 14-bit data simultaneously over Gigabit Ethernet, Camera Link, and CoaXPress for live viewing, analysis, or recording.

**Advanced Filtering Options**

The FLIR X6800sc incorporates an easy access, four-position motorized filter wheel that permits filter exchange in any environment. With automatic filter recognition, the camera knows the filter location, spectral band, and associated calibrations, making it easy to select a filter and load a custom calibration and configuration to the camera.

**Synchronization, Triggering, and Software**

The FLIR X6800sc can trigger using an external BNC input, a software trigger, or an IRIG-B time stamp, offering maximum versatility for synchronizing and triggering to external events or instrumentation. The camera works seamlessly with FLIR ResearchIR Max or third-party software such as Mathworks® MATLAB, for intuitive viewing, recording, and advanced processing of the thermal data. An optional Software Developers Kit (SDK) is available, or use industry-standard GigE Vision® toolkits.

**Key Features**

- 502 Hz full-frame high speed imaging
- On-camera RAM recording
- Synchronization with other instruments and events
- Full GenICam support over GigE and CXP interfaces
- Filter wheel with auto filter recognition
Specifications

System Overview

Detector Type
FLIR indium antimonide (InSb)

Spectral Range
3.0 – 5.0 μm or 1.5 – 5.0 μm

Resolution
640 x 512

Detector Pitch
25 µm

Spectral Band
1560 nm

Well Capacity
11.0 M electrons

Operability
> 99.8% (> 99.95% typical)

Sensor Cooling
Closed cycle rotary

Electronics/Imaging

Readout Modes
Asynchronous integrate while read
Asynchronous integrate then read

Synchronization Modes
Sync-in, Sync-out

Image Time Stamp
Hi resolution timestamp, sync to internal clock

Minimum Integration Time
270 ns

Pixel Clock
355 MHz

Frame Rate (Full Window)
Programmable; 0.0015 Hz to 502Hz

Subwindow Mode
Flexible windowing down to 64 x 4 (steps of 32 columns, 4 rows)

Dynamic Range
14-bit

On-Camera Image Storage
RAM (volatile): 16 GB, up to 26,000 frames, full frame,
SSD (non-volatile): 512 GB (supports >4 TB)

Radiometric Data Streaming
Simultaneous Gigabit Ethernet (GigE Vision®), Camera Link Full

Standard Video
HDMI

Command and Control
GigE, USB, RS-232, Camera Link

Temperature Measurement

Standard Temperature Range
-20°C to 350°C (-4°F to 662°F)

Optional Temperature Range
Up to 1,500°C (2,732°F)
Up to 2,000°C (3,632°F)

Accuracy
± 2°C or ± 2% of reading

Optics

Camera f/Number
f/2.5 or f/4.1

Available Lenses (Uses FLIR HDC Optics)
3-5 μm: 17 mm, 25 mm, 50 mm, 100 mm, 200 mm
Broadband (1-5 μm): 25 mm, 50 mm, 100mm

Close-up Lenses/Microscopes
1x, 4x (3-5 μm), requires f/4.1 camera

Lens Interface
FLIR HDC (4-tab bayonet)

Focus
Manual

Filtering
Filter wheel, standard 1-inch filters

Image/Video Presentation

Palettes
Selectable 8-bit

Automatic Gain Control
Manual, Linear, Plateau equalization, ROI, DDE

Overlay
Customizable (Timestamp, Date, Integration time, Internal temp, Frame rate, Sync mode, Cooler hours)

Video Modes
HD: 720p/50/59.9 Hz, 1080p/25/29.9 Hz

Digital Zoom
1x, 4x, 4:3

General

Operating Temperature Range
-20°C to 50°C (-4°F to 122°F)

Storage Temperature Range
-40°C to 80°C (-40°F to 176°F)

Shock/Vibration
40 g, 11 msec ½ sine pulse/4.3 g RMS random vibration, all 3 axes

Power
24 VDC (< 50 W steady state)

Weight w/Handle, w/o Lens
6.3 kg (14 lbs)

Size (L x W x H) w/o Lens, Handle
249 x 158 x 147 mm (9.8 x 6.2 x 5.8 in.)

Mounting
2 x 4 in. -20
4 x Ø10 -24
Side: 3 x ¼ in. -20 (each side)

* NEdT is measured at 50% well-fill, using a 25°C scene

Specifications are subject to change without notice.
For the most up-to-date specifications, go to www.flir.com