

X-Stream™ XS-4

Exceptional High-Speed



HIGHLIGHTS

- **Global electronic shutter** eliminates motion blur during the capture of extremely fast events
- **FlexROI™ Configurable Region of Interest**—acquire all or part of imaging area and increase framing rate and recording time
- **Pixel Binning**—Increased sensitivity and signal to noise ratio
- **Memory**—4GB for up to 16 seconds of recording time at full resolution and 1,000 fps
- **Speed**—5,145 fps at full resolution, over 400,000 fps at reduced resolution

APPLICATIONS

- PIV
- Ballistics
- Microscopy
- Crash testing
- Machine vision
- Airbag deployment

Find the blazing speeds of the X-Stream™ XS-4 a perfect complement to your high-speed imaging application. Featuring a state of the art 512 x 512 CMOS sensor, this camera offers outstanding light sensitivity and brilliant image quality, unlike other CMOS camera systems. The XS-4 races at over 5,000 frames per second at full resolution to a tremendous 400,000 frames per second at reduced resolution. With a 100nsec frame interval in Double Exposure Mode the XS-4 is even perfectly suited for ultra-high speed Particle Image Velocimetry applications.

Designing systems with portability in mind, IDT delivers this cutting-edge technology in an easy to use plug and play package. Our transportable, ultra-compatible systems can be used with laptops or desktops running with Macintosh or Windows operating systems. Every X-Stream camera includes our versatile software with plug-ins to other popular third party software packages like LabVIEW and MATLAB®.



IMAGES WITH IMPACT

Sample Frame Rates (Firmware REV. A)

Image Resolution	Max Frame Rate [Hz]
512H x 512V	5,145
512H x 256V	10,241
512H x 128V	20,288
512H x 64V	39,822
512H x 32V	76,790
512H x 16V	143,307
512H x 8V	252,794
512H x 4V	409,053

Software

For advanced or beginning users, our robust X-Stream VISION SDK™ contains both a C++ software development kit and stand-alone windows image acquisition package that highlights plug-ins to National Instruments' LabVIEW and The Mathworks' MATLAB® as well as ActiveX controls and TWAIN drivers (available for Mac OS X or Windows).

Specifications

Pixel Depth	10 bits
Resolution	512H x 512V pixels
Pixel Size	16 x 16 micron
Center to Center Spacing	16 micron
Pixel Fill Factor	40%
Dynamic Range	59 dB
Configurable Binning	1x1, 2x2, 3x3, 4x4
Trigger Modes	Internal (continuous), external (edge-low, edge-high, pulse low and pulse high)
Memory Configuration	1GB, 2GB, 3GB and 4GB
Minimum Inter-frame Rate	100 ns
Digital Interface	Plug-and-play with real-time preview, USB-2.0 (480 Mbps). Future upgrade: IEEE1394B and Giga Network
Trigger and Synchronization	CMOS level (3.3 V) via BNC connectors
Operating System	Windows 2000, XP, Mac OS X
Integration Time	100 ns to 1000 ms
Programmable Gain and Offset	10 bit resolution
Optical Interface	Standard: C-mount C to F and Canon converters available
Size/Weight	95x95x162 mm/1.9 Kg
Mount	1/4-20 photo mount
Power Requirements	100-240 V, 50-60 Hz
Temperature	+5°C to +40°C
Humidity	Less than 80% at +31°C

Configurable Memory

- **1GB internal memory** records 4,000 images in ~1 second of recording at 5000 fps.
- **Option: 2GB internal memory** records 8,000 images in ~2 seconds of recording at 5000 fps
- **Option: 3GB internal memory** records 12,000 images in ~3 seconds of recording at 5000 fps
- **Option: 4GB internal memory** records 16,000 images in ~4 seconds of recording at 5000 fps

Accessories

- **X-Stream Timing Hub**
USB2 digital interface, integrated control software with X-VISION, 8 outputs, 2 inputs
- **XS-IR Laser**
4W infrared laser with sheet forming optics
- **USB Repeater**
for use up to 50 feet



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Specifications subject to change without notice