EPIX®
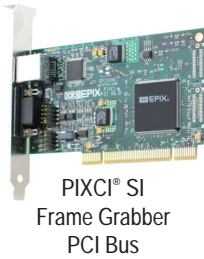
PIXCI® SI1
Frame Grabber
PCIe x1

PIXCI® SI2
Frame Grabber
PCIe x1

SVWGA Camera
(Lens Optional)

PIXCI® SI4
Frame Grabber
PCIe x4

PIXCI® SI
Frame Grabber
PCI Bus

SILICON VIDEO® WGA
High Dynamic Range Cameras

The **SILICON VIDEO® WGAC** (color) and **WGAM** (monochrome) cameras provide up to 752 pixel by 480 line images with up to 10 bits of grey scale per pixel in a progressive scan format at frame rates from 60 frames per second or up to 1338 frames per second at reduced resolution. The area of interest and pixel clock are programmable to allow tradeoffs in image size and image quality against frame rate. The camera has a global shutter for exposures as short as 27 microseconds. The camera can be programmed for linear or companded modes of operation. Linear mode provides precise intensity and color control which provides better image quality. Companded mode, combined with automatic gain and automatic exposure, allows the camera to automatically respond to changing image illumination. Our software provides control of all camera operations.

Asynchronous Capture with Strobe Output

The **SVWGAC** and **SVWGAM** cameras offer asynchronous capture to acquire an image (or images) in response to a trigger signal. The cameras have a strobe output signal to synchronize an LED strobe.

One RJ45 Cable and 4 Frame Grabbers

A single RJ45 cable connects the camera head to a PIXCI® frame grabber. It provides power to the camera, carries camera controls, carries the programmable pixel clock, and carries video. No separate power supply or power cable required. The SVWGA cameras are supported by 4 different PIXCI® SI series frame grabbers allowing use on either the PCI or PCIe bus. The PIXCI® SI supports one camera in a 32 bit PCI slot. The PIXCI® SI1 and SI2 frame grabbers support one or two cameras in a PCIe x1 slot. The PIXCI® SI4 supports 4 cameras on a PCIe x4 or wider slot.

Camera Controls

The XCAP-Lite sofware included with a PIXCI® frame grabber has a Capture & Adjust Dialog for selecting capture mode, ADC, AGC, and AEC control, pixel clock frequency, integration/exposure time, capture resolution, trigger control, slope selection and more. The **SVWGAC** color camera dialog provides automatic white balance, manual adjustment of Red, Green, and Blue gain, and extensive color balance controls.

Lens Optional

Add a 1/3" format C-Mount lens, programmer libraries, image processing, or video to disk and image analysis software, or request a complete computer system. EPIX, Inc. assembles imaging systems, built to your specifications, with cameras, frame grabbers, high-performance motherboards, and RAID arrays for video to disk capture.

Optical Format:	1/3-inch
Active Image Size:	4.51mm(H) x 2.88mm(V)
	5.35mm Diagonal
Active Pixels:	752H x 480V
Pixel Size:	6.0μm x 6.0μm
Color Filter Array:	Monochrome or Color RGB Bayer Pattern
Shutter Type:	Double-Buffered Global Shutter
Maximum Data Rate:	324 Megabits per second
Master Clock:	26.6 MHz
Full Resolution:	752 x 480
Frame Rate:	60 fps (at full resolution)
ADC Resolution:	10-bit
Responsivity:	4.8 Volts/Lux-sec (550nm)
Dynamic Range:	>55dB Linear
	>80dB-100dB in HiDy Mode
Supply Voltage:	5 to 12 Volts
Power Consumption:	320 mW at maximum data rate
Operating Temperature:	-40ºC to +85ºC
Camera Dimensions:	2.50″ L x 1.65″ H x 0.81″ D
	63.50mm L x 41.75mm H x 20.60mm D
Weight:	1.4 oz / 39 grams

IMAGE PROCESSING PRODUCTS FOR RESEARCH AND INDUSTRY

SVWGA Global Shutter / High Dynamic Range Cameras

Sequence Capture with SVWGA Camera and XCAP Imaging Program Versions

A SILICON VIDEO® WGA camera will capture continuously, at various resolutions and frame rates, as shown in the chart to the right.

XCAP-Lite will capture for almost 3 seconds at 752 x 480 resolution, 8 bits per pixel, 60 fps. Images must be saved individually. XCAP-Lite is included with the PIXCI® SI series frame grabbers.

The XCAP-Ltd program captures and saves sequences for more than 6 minutes into 8 GBytes of available memory (computer must have approximately 12 GBytes of installed memory). XCAP-Ltd is $495.

The XCAP-Std imaging program offers video to disk capture, which can allow continous capture for hours depending on the capacity of the computer's storage system. XCAP-Std is $1495. Select which version of the XCAP program is best for your application by reviewing the description at http://www.epixinc.com/products/xcap.htm.

SVWGAC & SVWGAM
Global Shutter Color/Mono Cameras

Frame Resolution	25 MHz Slowest	26.6 MHz Default	38 MHz	50 MHz Fastest
		Pixel Clock Frequency		
752 x 480	59 fps	63 fps	91 fps	119 fps
640 x 480	69 fps	74 fps	105 fps	139 fps
600 x 450	76 fps	81 fps	116 fps	153 fps
500 x 374	90 fps	96 fps	137 fps	180 fps
400 x 300	109 fps	116 fps	166 fps	219 fps
320 x 240	132 fps	141 fps	202 fps	265 fps
240 x 180	168 fps	179 fps	255 fps	336 fps
160 x 120	229 fps	244 fps	348 fps	459 fps
80 x 60	360 fps	383 fps	548 fps	721 fps
40 x 30	505 fps	537 fps	767 fps	1010 fps
752 x 2	669 fps	711 fps	1016 fps	1338 fps

SILICON VIDEO® WGA Monochrome Camera Typical Quantum Efficiency
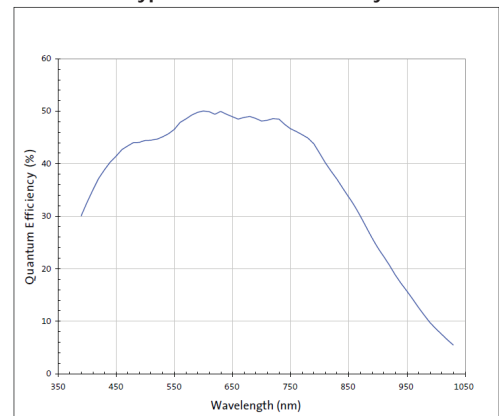
SILICON VIDEO® WGA Color Camera Typical Quantum Efficiency
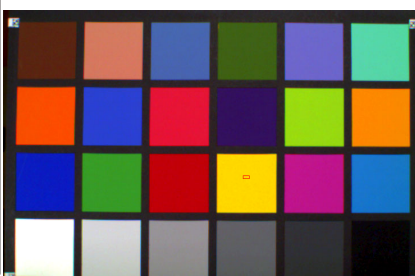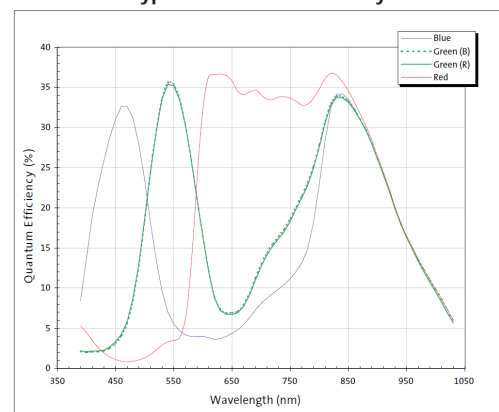
GretagMacbeth Color Checker captured by SVWGAC camera.

Full dynamic range with excellent color quality.