

XCI-SX1 XCI-V3

Smart Cameras

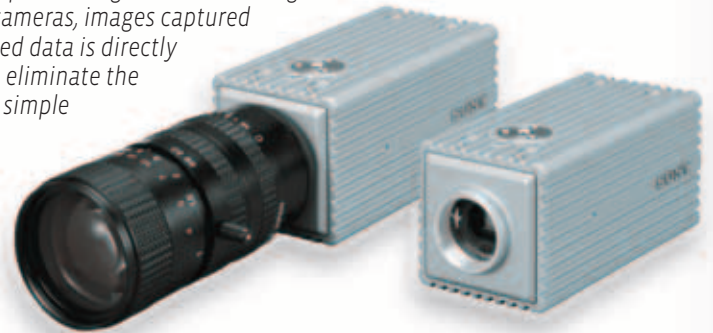
SONY

Superb Vision with the Intelligence of a PC

Sony's XCI-SX1 and XCI-V3 Smart Cameras are the perfect union of a high-end CCD camera with a complete PC – in a small, industrial, networkable package. These Smart cameras capture and process high-resolution images and can control peripheral devices. Unlike conventional machine vision cameras, images captured by these smart cameras are processed within the camera and the processed data is directly transmitted through Ethernet connection over a network. These cameras eliminate the need for conventional PC-based image-processing systems and allows for simple setup and efficient factory workflow.

The XCI-SX1 incorporates a 1/2-type SXGA (1280 x 1024) progressive scan CCD. The XCI-V3 is equipped with a 1/3-type VGA (640 x 480) progressive scan CCD. Both cameras include a high-performance and flexible AMD Geode™ GX533 processor with either built-in Linux® OS or Windows® XPE OS. In addition, these cameras incorporate 256MB SDRAM and a 100Base-TX/10Base-T interface for network connectivity. The XCI-SX1 and XCI-V3 are designed to allow OEMs, system integrators and end-users to install a variety of image-processing software applications (see list below) or to develop and apply customized applications to meet specific user needs.

With its high-performance, flexible integration and versatile interfaces the durably designed XCI-SX1 and XCI-V3 smart cameras are ideal for a wide range of machine vision applications such as object recognition, ID Reading, inspection, measurement, alignment and more.



FEATURES

High Performance 400MHz Geode GX533 Processor

- x86-compatible architecture
- 256MB main memory (DDR-SDRAM) and 1MB flash memory
- Integrated Compact Flash™ memory card – 128MB for Linux model & 1GB for XPe model
- Low power consumption

Various Interfaces

- 100Base-TX/10Base-T interface for network operation
- Monitor output
- USB 1.1 interface
- RS-232C serial interface and digital input/output allow cameras to be connected with external equipment such as sensors, strobe lights, and Programmable Logic Controllers (PLC).

1/2-type (XCI-SX1) and 1/3-type (XCI-V3), Progressive Scan CCDs With Square Pixels

Linux or Microsoft Windows XP Embedded Support

High-Quality Images

- XCI-SX1: SXGA (1280 x 1024) at 15 fps
- XCI-V3: VGA (640 x 480) at 60 fps

Horizontal and Vertical Partial Scanning Function

- Allows users to select a specific scanning area to reduce data size and increase frame rate, which minimizes image processing time.

Binning Function

- Vertical binning combines image data for every two lines vertically to increase the frame rate, which minimizes image processing time.
- Horizontal binning combines image data for every two pixels horizontally, thereby increasing the sensitivity, and shortening the capture speed, which minimizes image processing time.

Accurate Image Capture Timing

- Equipped with an external trigger input and a trigger delay function of up to four seconds in 1 ms intervals, these cameras can accurately capture images of fast moving objects such as in production lines. What's more, the XCI-V3 is equipped with a strobe adjustment function to accurately time an external strobe light.

Built-in Real Time 3 x 3 Image Pre-Processing Filter

- The XCI-V3 camera features a 3 x 3 filter that can be used to emphasize the edges of an object or to change the contrast so that image details stand out.

Compact and Lightweight

- 2 1/4 (W) x 2 1/4 (H) x 4 3/8 (D) inches (55 x 55 x 110 mm), 14 oz (400 g)

Easy Camera Settings

High Shock and Vibration Resistance

Compatible Software

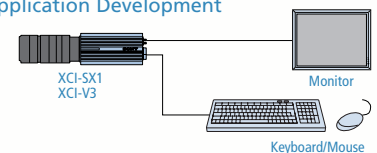
- Vision Builder AI by National Instruments
- Halcon by MVTec including Chassis User Interface by Visics
- Sapera™ Processing and Sherlock™ by Dalsa - Coreco
- eVision™ Tools by Euresys

Operating Systems

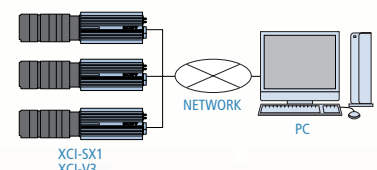
- Built-in Linux OS (XCI-SX1 & XCI-V3)
- Built-in Microsoft Windows XPe OS (XCI-SX1/XPE & XCI-V3/XPE)

SYSTEM CONFIGURATIONS

Application Development



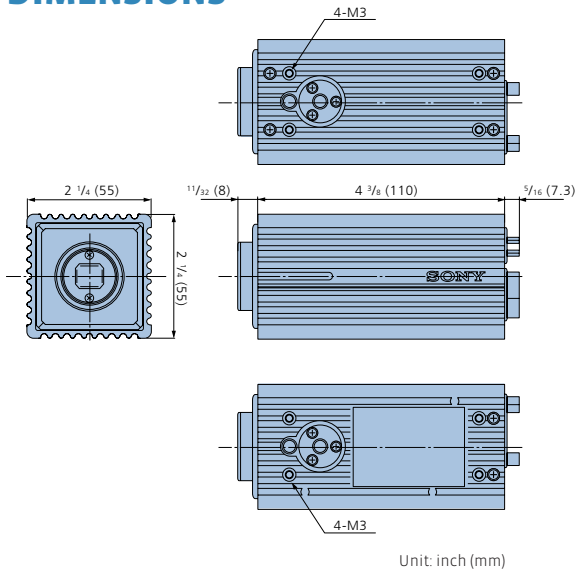
Operation Over Network



SPECIFICATIONS

	XCI-SX1	XCI-SX1/XPE	XCI-V3	XCI-V3/XPE
Sensor block				
Image device	1/2-type progressive scan IT monochrome CCD		1/3-type progressive scan IT monochrome CCD	
Effective resolution (H x V)	1,280 x 1,024 (SXGA)		640 x 480 (VGA)	
Cell size (H x V)	4.65 x 4.65 μm		7.4 x 7.4 μm	
Frame rate	15 fps (SXGA)		60 fps (VGA)	
Gain control	Manual (0 to +18 dB, 1 dB steps)			
Electronic shutter	2 to 1/50,000 s (trigger mode), 2 to 1/100,000 s (free run mode)			
Binning function	Vertical / Horizontal binning			
Partial scanning function				
Vertical random scanning	32 to 1,024 lines, 32 line steps		30 to 480 lines, 30 line steps	
Horizontal random scanning	384 to 1,280 pixels, 128 pixel steps		192 to 640 pixels, 64 pixel steps	
Typical frame rate	34 fps (VGA), 21 fps (XGA)		300 fps (30 lines)	
External trigger input	Pulse-edge detection mode / Pulse-width detection mode			
External trigger input voltage	Low : 0 to +0.5 V, High : +4.5 V to +5 V		Low : 0 to +0.5 V, High : +4.5 V to +24 V	
Trigger delay function	0 to 4 s, 1 ms steps			
Strobe delay to start exposure	-		-67 μs to +60 μs, 1 μs step	
External trigger latency	Less than 10 μs			
Hardware Look Up Table	Gamma compensation, Binarization negative/positive reverse, etc.			
Hardware 3 x 3 filter	-		Edge detection, Sharpness, etc.	
Processor				
CPU	x 86, AMD Geode GX533, 400 MHz			
Memory	256 MB DDR-SDRAM, 128 MB Compact Flash	256 MB DDR-SDRAM, 1 GB Compact Flash	256 MB DDR-SDRAM, 128 MB Compact Flash	256 MB DDR-SDRAM, 1 GB Compact Flash
Operating system	Monta Vista Linux Professional edition 3.0	Windows XPE	Monta Vista Linux Professional edition 3.0	Windows XPE
Interfaces				
Ethernet	100Base-TX/10Base-T (Network protocols: TCP/IP (IPv4), HTTP, FTP)			
Monitor output	D-sub 15pin for multi scan monitor			
USB	Version 1.1			
Serial interface	RS-232C			
Digital I/Os	TTL IN/OUT, Isolated IN/OUT, Trigger IN, Exposure OUT			
General				
Lens mount			C-mount	
Minimum illumination	4 lx (F1.4, +18 dB gain)		1 lx (F1.4, +18 dB gain)	
Power requirements	10.5 to 26.4 V			
Power consumption	7.8 W		7.5 W	
Dimensions (W x H x D)	2 1/4 x 2 1/4 x 4 3/8 inches (55 x 55 x 110 mm)			
Weight	14 oz (400 g)			
Operating temperature	23 to 113 °F (-5 to +45 °C)			
Storage temperature	-22 to +140 °F (-30 to +60 °C)			
Operating humidity	20 to 80% non condensing			
Storage humidity	20 to 95% non condensing			
Vibration resistance	10 G (20 to 200 Hz)			
Shock resistance	70 G			
Regulations	FCC / CE / IC / VCCI Class A			
Supplied accessories				
Lens mount cap, Operating instructions				

DIMENSIONS



PIN ASSIGNMENT

6-pin connector		12-pin connector	
Pin No.	XCI-SX1 Name	XCI-SX1 Name	XCI-V3 Name
1	TXD (RS-232C)	1	GND
2	RXD (RS-232C)	2	+12V IN
3	GND	3	GND
4	ISO IN +	4	ISO OUT +
5	ISO IN -	5	GND
6	NC	6	TTL IN
		7	TTL OUT
		8	GND
		9	ISO OUT -
		10	EXP OUT
		11	TRIG IN
		12	GND

OPTIONAL ACCESSORIES

Camera Adaptor	12-pin Camera Cable	
DC-700/DC-700CE	CCXC-12P02N (2 m)	CCXC-12P10N (10 m)
	CCXC-12P05N (5 m)	CCXC-12P25N (25 m)

SONY

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