

INTRODUCTION

Sony introduces the XCI-SX1 and XCI-V3, equipped with a 1/2-type SXGA (1280x1024) progressive scan CCD and a 1/3-type VGA (640x480) progressive scan CCD, respectively. Both cameras have an embedded CPU and a 100Base-TX/10Base-T interface for network connectivity. Incorporating the high-performance and flexible AMD Geode™ GX533 processor and Linux® kernel, the XCI-SX1 and XCI-V3 are designed to allow integrators to install a variety of image-processing software applications or to develop and apply customised applications to meet specific user needs. If preferred, the camera operating system can be replaced with Microsoft® Windows® XP Embedded* for flexible system integration with your Windows-based system.

Unlike conventional machine vision cameras, images captured by these intelligent cameras are processed within the camera and the processed data is directly transmitted to a PC over a network. These cameras eliminate the need for conventional image-processing systems and allows for simple setup and efficient factory workflow. With its high-performance, flexible integration, and versatile interfaces the durably designed XCI-SX1 and XCI-V3 Intelligent Cameras are ideal for a wide range of machine vision applications such as object recognition, inspection, measurement, alignment, and more.

* Windows XP Embedded must be purchased separately from Microsoft Corporation. Contact your local Sony sales office or authorized dealer for instructions on how to obtain the camera driver software that runs on Windows XP Embedded.

FEATURES

High Performance 400MHz Geode GX533 Processor

- x86-compatible architecture
- 256MB main memory (DDR-SDRAM) and 1MB flash memory
- Integrated 128 MB Compact Flash™ memory card
- 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 minimises image processing time.

Binning Function

- Vertical binning combines image data for every two lines vertically to increase the frame rate, which minimises image processing time.
- Horizontal binning combines image data for every two pixels horizontally, thereby increasing the sensitivity, and shortening the capture speed, which minimises 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 fully programmable 3 x 3 filter that can be used to emphasize the edges of an object or to change the contrast so that the image details stand out.

Compact and Lightweight

- 55 (W) x 55 (H) x 110 (D) mm (2 ¼ x 2 ¼ x 4 ⅜ inches), 400 g (14 oz)

Easy Camera Settings

High Shock and Vibration Resistance



* lens not included

** The Linux kernel and camera driver are preinstalled in these cameras. Please contact your local Sony sales office or authorized dealer for information on converting the system to Windows XP Embedded.

XCI-SX1 XCI-V3

INTELLIGENT CAMERAS

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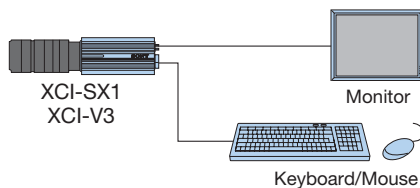


SPECIFICATIONS

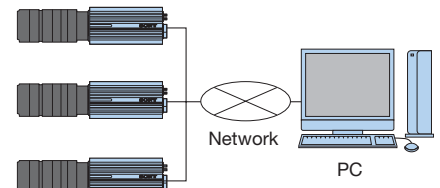
	XCI-SX1	XCI-V3
Sensor block		
Image device	1/2-type progressive scan IT monochrome CCD	1/3-type progressive scan IT monochrome CCD
Effective resolution (H x V)	1,280 x 1,024 (SXGA)	640 x 480 (VGA)
Cell size (H x V)	4.65 x 4.65 µm	7.4 x 7.4 µm
Frame rate	15 fps (SXGA)	60 fps (VGA)
Gain control	Manual (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, Binarisation negative/positive reverse, etc.	
Hardware 3 x 3 filter	-	Programmable for Edge detection, Sharpness, etc.
Processor		
CPU	x 86, AMD Geode GX533, 400 MHz	
Memory	256 MB DDR-SDRAM, 128 MB Compact Flash	
Operating system	Monta Vista Linux Professional edition 3.0	
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	C-mount
Minimum illumination	4 lx (F1.4, +18 dB gain)	1 lx (F1.4, +18 dB gain)
Power requirements		
Power consumption	7.8 W	7.5 W
Dimensions (W x H x D)	55 x 55 x 110 mm (2 1/4 x 2 1/4 x 4 3/8 inches)	
Mass	400 g (14 oz)	
Operating temperature	-5 to +45 °C (23 to 113 °F)	
Storage temperature	-30 to +60 °C (-22 to +140 °F)	
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	
Optional accessories	Camera Adaptor DC-700/DC-700CE, 12-pin Camera Cable CCXC-12P02N (2 m), CCXC-12P10N (10 m), CCXC-12P05N (5 m), CCXC-12P25N (25 m), Compact Flash accessory kits: XP embedded accessory kits (includes a CF 1GB preprogrammed with the XPe image and the XPe licence sticker); CFXCI-TRA1GV3 (XCI-V3 Transcend CF), CFXCI-HAG1GV3 (XCI-V3 Hagiwara CF), CFXCI-TRA1G (XCI-SX1 Transcend CF), CFXCI-HAG1G (XCI-SX1 Hagiwara CF)	

SYSTEM CONFIGURATIONS

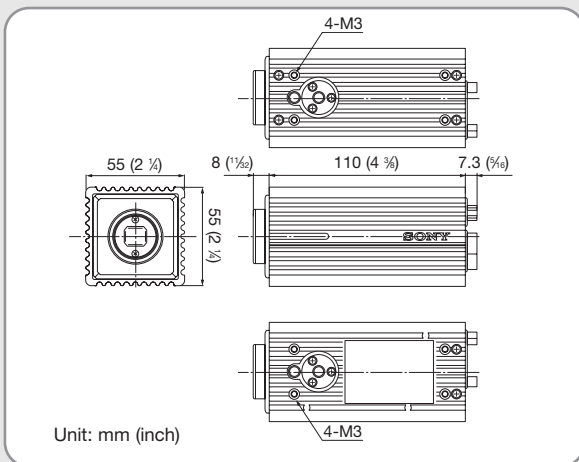
Application Development



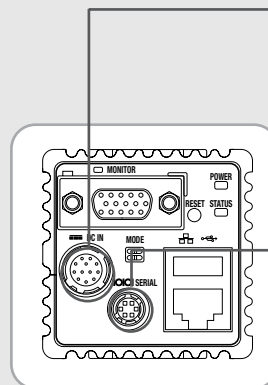
Operation Over Network



DIMENSIONS



PIN ASSIGNMENT



Rear panel

12-pin connector

XCI-SX1		XCI-V3	
Pin No.	Name	Pin No.	Name
1	GND	7	TTL OUT
2	+12V IN	8	GND
3	GND	9	ISO OUT -
4	ISO OUT +	10	EXP OUT
5	GND	11	TRIG IN
6	TTL IN	12	GND

6-pin connector

Pin No.	XCI-SX1 Name	XCI-V3 Name
1	TXD (RS-232C)	
2	RXD (RS-232C)	
3	GND	
4	ISO IN +	
5	ISO IN -	
6	NC	TTL OUT2

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