SONY®

Component/OEM

B/W Digital Video Cameras

XCD-SX910
XCD-SX910CR
XCD-X710
XCD-X710CR

The XCD-SX910/SX910CR and XCD-X710/X710CR cameras are the latest additions to Sony's IEEE 1394 digital camera family. These cameras employ a progressive scan CCD with square pixels, making them ideal for a wide variety of industrial applications.

The XCD-SX910 and XCD-SX910CR cameras incorporate a 1/2 type 1,450,000 pixels CCD and offer SXGA resolution images. The XCD-X710 and XCD-X710CR cameras incorporate a 1/3 type 800,000 pixels CCD and offer XGA resolution images. What's more, the XCD-SX910CR and XCD-X710CR cameras use a CCD with a color mask (commonly called a "Bayer filter") and output the "raw color" pixel values in 8 or 10 bit to be converted to a color image on the computer. The color conversation that takes place in the computer is supported by Sony's new IEEE 1394 software and most 3rd party Firewire® (IIDC) compatible software.

These cameras incorporate an external trigger function, allowing for fast moving objects or still images to be clearly captured even in low light environments. A variety of convenient features such as partial scan* (16 x 16 zones) and selectable output modes (frame rate/bit depth) make these cameras extremely flexible. With their high frame rates and compact, robust design, these cameras are the right choice for quality-critical applications ranging from demanding factory automation and semiconductor inspection to food, agriculture and pharmaceutical applications of machine vision.

Features

High resolution with progressive scan square pixel CCD

- XCD-SX910/XCD-SX910CR: 1/2" IT CCD
  - SXGA, 1280(H) x 960(V) with a maximum resolution of 1376 x 1024

- XCD-X710/XCD-X710CR: 1/3" IT CCD
  - XGA, 1024(H) x 768(V)

IEEE 1394 Digital Camera (IIDC) Specification Version 1.30 compliant

Selectable frame rate

- XCD-SX910/XCD-SX910CR: Up to 15 fps

- XCD-X710/XCD-X710CR: Up to 30 fps

8-bit (Mono8) or 10-bit (Mono16) output

External trigger input/Exposing output function (BNC)

Partial scan (16 x 16 selectable zones in trigger mode)

Binning function (1 x 2, 2 x 2)

Fast hardware or software asynchronous trigger

Auto/Manual shutter exposure (1/100,000 ~ 17.5 sec)

Auto/Manual gain

- XCD-SX910/X710: 0 to 24 dB, 0.35 dB steps

- XCD-SX910CR/XCD-SX710CR: 0 to 18 dB, 0.035 dB steps

C mount

High shock and vibration tolerance

Lead-free solder mounting board

Optional Accessories

Tripod adaptor
VCT-ST70I
Isolated type
Approx. 14 g (0.5 oz)
Dimensions: 40 (W) x 6 (H) x 59 (D) mm
(1-5/8 x 1/4 x 2-3/8 inches)

Supported Video Mode

XCD-SX910

Fixed format							
Format	Mode	Image size (H x V)	Color coding	Frame rate (fps)			
				15	7.5	3.75	1.875
0	5	640 x 480	Mono8	Yes	Yes	Yes	-
1	6	640 x 480	Mono16	-	Yes	Yes	-
	2	800 x 600	Mono8	Yes	Yes	-	-
	5	1024 x 768	Mono8	Yes	Yes	Yes	Yes
	6	800 x 600	Mono16	-	Yes	Yes	-
	7	1024 x 768	Mono16	-	Yes	Yes	Yes
2	2	1280 x 960	Mono8	Yes	Yes	Yes	Yes
	6	1280 x 960	Mono16	-	Yes	Yes	Yes

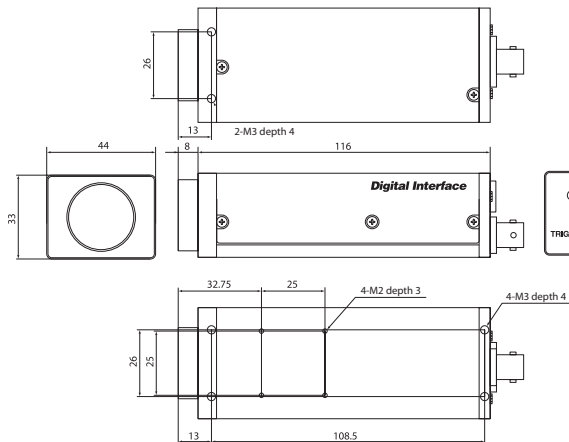| Free format								
Format	Mode	Image size (H x V)	Color coding	Partial scan	Frame rate (fps)			
					30	15	7.5	3.75
7	0	1280 x 960	Mono8	16 x 16	-	-	-	-
			Mono16	16 x 16	-	-	-	-
	1	640 x 480 (2 x 2 binning)	Mono8		Yes	Yes	-	-
			Mono16	-	-	Yes	Yes	-
	2	1280 x 480 (1 x 2 binning)	Mono8	-	Yes	Yes	-	-
			Mono16	-	-	Yes	Yes	-
	3	1376 x 1024	Mono8	-	-	Yes	Yes	-
			Mono16	-	-	-	Yes	Yes
	4	1024 x 1024	Mono8	-	-	Yes	Yes	-
			Mono16	-	-	-	Yes	Yes

XCD-X710

Fixed format								
Format	Mode	Image size (H x V)	Color coding	Frame rate (fps)				
				30	15	7.5	3.75	1.875
0	5	640 x 480	Mono8	Yes	Yes	Yes	Yes	-
	6	640 x 480	Mono16	-	Yes	Yes	Yes	-
1	2	800 x 600	Mono8	Yes	Yes	Yes	-	-
	5	1024 x 768	Mono8	Yes	Yes	Yes	Yes	Yes
	6	800 x 600	Mono16	-	Yes	Yes	Yes	-
	7	1024 x 768	Mono16	-	Yes	Yes	Yes	Yes

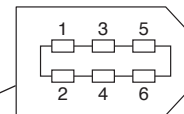| Free format							
Format	Mode	Image size (H x V)	Color coding	Partial scan	Frame rate (fps)		
					50	25	12.5
7	0	1024 x 768	Mono8	16 x 16	-	-	-
			Mono16	16 x 16	-	-	-
	1	512 x 384 (2 x 2 binning)	Mono8	-	Yes	Yes	-
			Mono16	-	-	Yes	Yes
	2	1024 x 384 (1 x 2 binning)	Mono8	-	Yes	Yes	-
			Mono16	-	-	Yes	Yes

Specifications

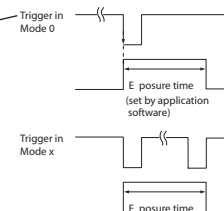|	XCD-SX910	XC-SX910CR	XCD-X710	XCD-X710CR
Image device	1/2 type progressive scan IT CCD		1/3 type progressive scan IT CCD	
Effective picture elements	1,392 (H) x 1,040 (V); 1,450,000 pixels		1,034 (H) x 779 (V); 800,000 pixels	
Output image size	SXGA: 1,280 (H) x 960 (V), Max. 1,376 (H) x 1,024 (V)		XGA: 1,024 (H) x 768 (V)	
Cell size	4.65 μm (H) x 4.65 μm (V)			
Lens mount	C mount			
Minimum illumination	4 lx (F0.95 lens open, +18 dB gain)	20 lx (F0.95 lens open, +18 dB gain)	4 lx (F0.95 lens open, +18 dB gain)	20 lx (F0.95 lens open, +18 dB gain)
Digital interface	IEEE 1394-1995			
Transfer rate	400/200 Mbps			
Frame rate	15/7.5/3.75/1.875 fps		30/15/7.5/3.75/1.875 fps	
Gain control	Auto/manual (0 to 24 dB, 0.035 dB steps)	Auto/manual (0 to 18 dB, 0.035 dB steps)	Auto/manual (0 to 24 dB, 0.035 dB steps)	Auto/manual (0 to 18 dB, 0.035 dB steps)
White Balance	-	R/B Gain Control	-	R/B Gain Control
Hue	-	G Gain	-	G Gain
Optical Filter	-	Bayer Output	-	Bayer Output
External shutter	1/100,000 to 17.5 s			
External trigger shutter	Trigger start (mode0), trigger start and exposure duration (mode1)			
Partial scan	256 zones (16 x 16)			
Power requirements	DC 8 to 30 V (from IEEE 1394 camera cable)			
Dimensions	44 (W) x 33 (H) x 116 (D) mm (1 3/4 x 1 15/16 x 4 5/8 inches)			
Mass	250 g (9 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	10 G (20 to 200 Hz)			
Shock resistance	70 G			
Regulations	UL60950 listed, FCC Class B Digital Device, CE (EN61326)			
Supplied accessories	Lens mount cap (1), Operating instructions (1), Cable (1), Clamp filter (2)			
Optional accessories	VCT-ST70I Tripod Adaptor			

Dimensions

Pin Assignment

1: Power
2: Power
3: TPB-
4: TPB+
5: TPA-
6: TPA+

Trigger Shutter

Trigger in Mode 0

E posure time (set by application software)

Trigger in Mode x

E posure time

SONY®

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