

Digital Camera Module

XCL-U1000
XCL-U1000C
XCL-V500
XCL-X700



Sony's new XCL Series features four cameras equipped with a digital video interface that conforms to the Camera Link™ industry standard. These new cameras enable the capture of high-speed, high-resolution images while simplifying connectivity to machine-vision systems with its standard 3M MDR 26-pin cable.

The XCL-U1000 and XCL-U1000C cameras incorporate a 1/1.8-type progressive scan CCD that produce detailed, UXGA resolution images (2 mega pixels at 15 fps). Their graphic output allows them to be connected directly to a PC monitor. Their high resolution and frame rate make them especially suited to automated inspection, process control or microscopy. The XCL-V500 and XCL-X700 cameras feature a 1/3-type progressive scan CCD, respectively VGA and XGA resolutions, that captures high-quality black and white images at a high frame rate, designed in a compact and lightweight body. Sony's XCL Series of high-performance and feature-rich cameras is the ideal solution for today's wide range of machine vision applications. These new devices are particularly suitable for users who wish to use the CameraLink interface to retain a traditional frame-grabber architecture to pre-process images.

Features

XCL-U1000

Black and White Digital Video Camera Module

XCL-U1000C

Colour Digital Video Camera Module

- ▲ **High-resolution image capture**
UXGA image (1,600 x 1,200 pixels) captures video at 15 fps
- ▲ **1/1.8-type progressive scanning CCD with square pixels**
- ▲ **Effective picture element**
1,628(H) x 1,236(V)
- ▲ **High sensitivity**
400 lx at F 5.6 (XCL-U1000)
2,000 lx at F8 (XCL-U1000C)
- ▲ **Camera Link standard conformity**
- ▲ **Monitor output**
- ▲ **Compact and lightweight**
56 (W) x 44 (H) x 95 (D) mm
(2 1/4 x 1 3/4 x 3 3/4 inches), 250 g (9 oz)
- ▲ **External trigger shutter**
1/15 to 1/10,000 s
- ▲ **C-mount lens**
- ▲ **Partial scanning**
- ▲ **Binning function (XCL-U1000)**
- ▲ **White balance (XCL-U1000C)**
Auto/Manual/Preset selectable
- ▲ **Matrix function for accurate color reproduction (XCL-U1000C)**
- ▲ **High shock and vibration resistance**

Features

XCL-V500

Black and White Digital Video Camera Module

XCL-X700

Black and White Digital Video Camera Module

- ▲ **High-rate scanning**
VGA image (648 x 494 pixels)
captures video at 60 fps (XCL-V500)
XGA image (1,024 x 768 pixels)
captures video at 30 fps (XCL-X700)
- ▲ **1/3-type progressive scanning CCD with square pixels**
- ▲ **Effective picture element**
659(H) x 494(V) (XCL-V500)
1034(H) x 779(V) (XCL-X700)
- ▲ **High sensitivity**
400 lx at F 5.6
- ▲ **Camera Link standard conformity**
- ▲ **Compact and lightweight**
29 (W) x 29 (H) x 30 (D) mm
(1 3/16 x 1 3/16 x 1 3/16 inches), 55 g (2 oz)
- ▲ **External trigger shutter**
1/4 to 1/100,000 s
- ▲ **Synchronization signal**
Internal/external (HD/VD)
- ▲ **C-mount lens**
- ▲ **Partial scanning**
- ▲ **Binning function**
- ▲ **High shock and vibration resistance**

	XCL-V500	XCL-X700	XCL-U1000	XCL-U1000C
Image device	1/3-type PS IT CCD		1/1.8-type PS IT CCD	
Effective picture elements (HxV)	659 x 494	1034 x 779	1628 x 1236	
Output image size	648 x 494 pixels	1,024 x 768 pixels	1,600 x 1,200 pixels	
Cell size	7.4 x 7.4 μm (H/V)	4.65 x 4.65 μm (H/V)	4.4 x 4.4 μm (H/V)	
Sensitivity	400 lx at F5.6		400 lx at F5.6	2000 lx at F8
Sync system	Internal/External (HD/VD)		Internal	
Lens mount	C mount			
Frame rate	60 fps	30 fps	15 fps	
Output data clock	24.55 MHz	29.5 MHz	36 MHz	
Gain	0 to +18 dB			
Gamma	Fixed		ON/OFF	
Trigger shutter	1/4 to 1/100,000 s		1/15 to 1/10,000 s	
Partial scan	Vertical ON/OFF			
Binning	Vertical +2 Line		Vertical +2 Line	-
Minimum illumination	1 lx		2 lx or less	4 lx or less
Video output	Digital (Camera Link conformity)			
Detail	-		ON/OFF	
Matrix	-		ON/OFF	
White balance	-		Pre-set, Manual, AWB	
Power requirements	DC12 V			
Power consumption	2.0 W or less	2.2 W or less	5.5 W or less	
Dimensions (WxHxD)	29 x 29 x 30 mm (1 3/16 x 1 3/16 x 1 3/16 inches)		44 x 56 x 95 mm (1 3/4 x 2 1/4 x 3 3/4 inches)	
Mass	55 g (2 oz)		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 % (no condensation)			
Storage humidity	20 to 95 % (no condensation)			
Vibration resistance	10 G (20 Hz to 200 Hz)			
Shock resistance	70 G			
Supplied accessories	Lens mount cap (1), operating instructions (1)			
Optional accessories	26-pin Camera Link cables, Camera power supply (DC-700CE), power cable, tripod adaptor (VCT-333I for the XCL-V500 and XCL-X700, VCT-ST70I for the XCL-U1000/C)			

XCL-V500/XCL-X700 12-pin connector

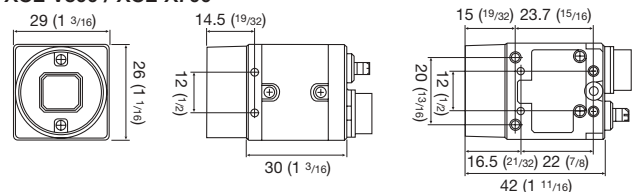
Pin No.	Re-Start/Re-Set	External Trigger Shutter	Camera Sync Signal Output	External Sync Mode (HD/VD)
1	GND	GND	GND	GND
2	+12V DC	+12V DC	+12V DC	+12V DC
3	-	-	-	-
4	CLOCK(+)input(signal)	CLOCK(+)input(signal)	CLOCK(+)input(signal)	CLOCK(+)input(signal)
5	HD input(GND)	HD input(GND)	HD output(GND)	HD input(GND)
6	HD input(signal)	HD input(signal)	HD output(signal)	HD input(signal)
7	RE-SET	VD input(signal)	VD output(signal)	VD input(signal)
8	-	-	-	-
9	CLOCK(-)input(signal)	CLOCK(-)input(signal)	CLOCK(-)input(signal)	CLOCK(-)input(signal)
10	-	WEN output(signal)	-	-
11	-	Trigger pulse input(signal)	-	-
12	RE-SET(GND)	VD input(GND)	VD output(GND)	VD Input(GND)

XCL-U1000/XCL-U1000C 12-pin connector (DC input) 15-pin connector (VGA Output) 6-pin connector (RS-232)

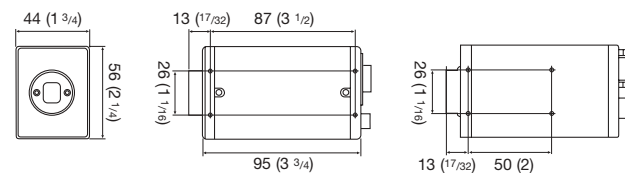
Pin No.	12-pin connector (DC input)	15-pin connector (VGA Output)	6-pin connector (RS-232)
1	GND	R output	TXD
2	+12V DC	G output	FXD
3	GND	B output	GND
4	NC	NC	NC
5	GND	GND	NC
6	NC	GND	NC
7	NC	GND	
8	GND	GND	
9	NC	NC	
10	Exposure pulse output	GND	
11	Trigger pulse input	NC	
12	GND	NC	
13		HD output	
14		VD output	
15		NC	

Dimensions

XCL-V500 / XCL-X700



XCL-U1000 / XCL-U1000C



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XCL-V500/XCL-X700



XCL-U1000/XCL-U1000C/