

# XCL-SG Series

## Digital Video Camera Module

Sony is expanding its popular XCL CameraLink Series with the introduction of two new high-quality cameras.

Exmor Pregius  PoCL



**XCL-SG510/510C**  
2/3-type 5.1MP 154fps

The new XCL-SG510 (monochrome) and XCL-SG510C (color) integrate Sony's 2/3-type CMOS image sensors with a global function that can accurately capture high-speed moving images. These cameras realize 5.1-megapixel resolution with 154 frames per second (fps) in 80 bit configuration. They offer some unique image processing features such as Wide dynamic range and Frame accumulation. In addition, these new cameras incorporate advanced features such as Area gain, Multi ROI and Area Exposure.

These promising features and benefits make XCL-SG Series cameras ideal for various uses including ITS (Intelligent Transportation System), factory automation, food and beverage inspection, and pharmaceutical applications.

### Key Features

Shading correction

Temperature readout

Defect correction

Trigger Mode: Free run/ Special trigger mode  
(Bulk trigger/Sequential trigger)

Readout mode:  
Normal/Binning (XCL-SG510C)/ Partial scan

3 x 3 filter

Readout features: Built-in test pattern/LUT  
(Binarization, Gamma (variable))

One-push WB, Manual (XCL-SG510C)

CameraLink Ver.2.0

PoCL / DC 12 V support

Dimensions (excluding protrusions):  
44 (W) x 44 (H) x 30 (D) mm

C-mount

High shock and vibration resistance

### Support functions

#### High frame rate 154 fps

- High Frame Rate transfer
- Full: 154 fps (8-bit x 10 tap)
- Medium: 64 fps (8-bit x 4 tap)
- Base: 48 fps (8-bit x 3 tap)

#### Unique Image Processing

- Wide dynamic range
- Frame accumulation
- Area exposure
- Area gain
- Multi ROI

#### Selectable Cable

- PoCL support
- 80 bit / Full / Medium / Base configuration support

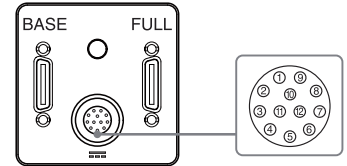
# XCL-SG Series - Specifications

Camera	XCL-SG510	XCL-SG510C
Image Sensor	2/3-type CMOS Image sensors with a global shutter function (PREGIUS)	
Image Sensor (Number of Effective Pixels, H x V)	2,464 x 2,056	
Cell Size (H x V)	3.45 μm x 3.45 μm	
Output Pixels (H x V)	2,448 x 2,048	
Output Pixels (H x V, Full Resolution)	2,464 x 2,056	
Color Filter	-	RGB color mosaic filter
Frame Rate	16 fps (Base 1 tap) 32 fps (Base 2 tap) 48 fps (Base 3 tap) 64 fps (Medium 4 tap) 124 fps (Full 8 tap) 154 fps (80 bit 10 tap)	
Minimum Illumination (50%)	0.5 lx (Iris: F1.4, Gain: +18 dB, Shutter: 1/30 s)	12 lx (Iris: F1.4, Gain: +18 dB, Shutter: 1/30 s)
Sensitivity	F5.6 (400 lx, Gain: 0 dB, shutter 1/30s)	F5.6 (2000 lx, Gain: 0 dB, shutter 1/30s)
S/N Ratio	More than 50 dB	
Gain	Auto, Manual : 0 dB to +18 dB	
Shutter Speed	Auto, Manual : 60 s to 1/100,000 s	
White Balance	-	One push WB, Manual
<b>Camera Features</b>		
Readout Modes	Normal, Binning (2 x 1, 1 x 2, 2 x 2), Partial Scan, Multi ROI	Normal, Partial Scan, Multi ROI
Readout Features	Binarization, Built-in test pattern, LUT, 3 x 3 filter	
Synchronization	Hardware trigger, Software trigger	
Trigger Modes	Edge detection, Pulse width detection, Bulk trigger, Sequential trigger	
Userset (Memory Channel)	16	
User Memory	32 kbytes + 64 bytes x 16ch	
Image Buffer	-	
Other Features	Wide dynamic range, Frame accumulation, Area exposure, Area gain, Defect correction, Shading correction	
<b>Interface</b>		
Video Data Output	digital Mono 8, 10, 12, 16-bit	digital Raw 8, 10, 12, 16-bit, Raw, digital
Serial Interface	RS232C	
Iris Control	-	
Digital Interface	LVDS	
Camera Specification	CameraLink® Version 2.0	
Output Data Clock	85 MHz (1, 2, 3, 4, 8, 10tap) 65 MHz (1, 2, 3, 4, 8, 10tap) 45 MHz (1, 2, 3, 4, 8, 10tap)	
Digital Input/Output	ISO IN (x1), ISO OUT (x2), TTL IN (x1), TTL IN/OUT (x2, Selectable)	
<b>General</b>		
Lens Mount	C mount	
Power Requirements	DC +12 V (+10.5 V to +15.0 V)	
Power Consumption	5.0 W (max.)	
Operating Temperature	-5°C to +45°C 23°F to +113°F	
Performance Guarantee Temperature	0°C to 40°C 32°F to 104°F	
Storage Temperature	-30°C to +60°C -22°F 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	
Dimensions (W x H x D) *1	44 x 44 x 30 mm (excluding protrusions) 1 3/4 x 1 3/4 x 1 3/16 inches (excluding protrusions)	
Mass	96g 3.4 oz	
Regulations	UL60950-1, FCC Class A, CSA C22.2-No.60950-1, IC Class A Digital Device, CE : EN61326 (Class A), AS EMC: EN61326-1, VCCI Class A, KCC	
MTBF	Approx. 8.1 years	
Supplied Accessories	Lens mount cap (1) Operating instructions (1)	

Pin assignments

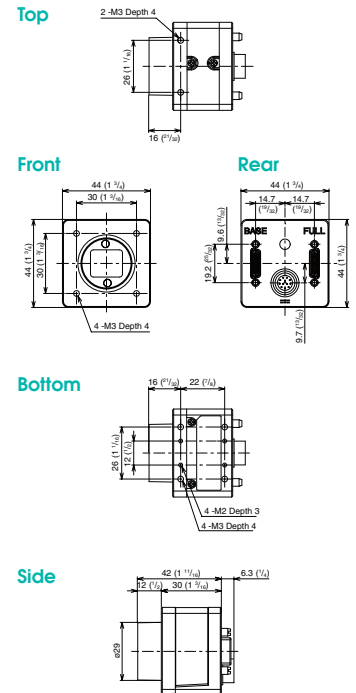
## 12-pin connector

Pin No.	Signal
1	Ground
2	DC+12V
3	GPO4 (ISO-)
4	GPI1 / GPO1
5	GPO2 (ISO-)
6	GPO2 (ISO+)
7	GPI3 / GPO3
8	GPI4 (ISO-)
9	GPO4 (ISO+)
10	GPI4 (ISO+)
11	GPI2
12	GPO4 (ISO-)



Dimensions

## XCL-SG510/510C Models



Unit: mm (inches)

\*1 The values for dimensions are approximate.

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