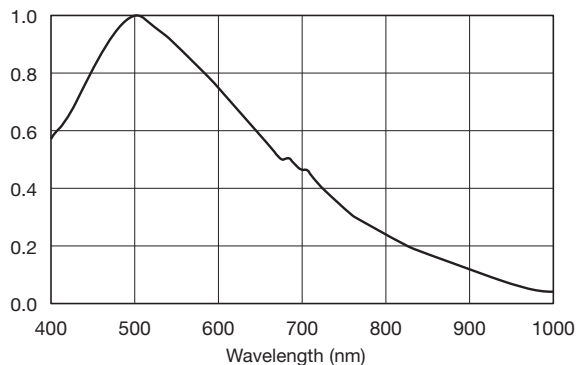


Spectral Sensitivity Characteristics

• XCL-U100 (Typical Values)

Relative sensitivity

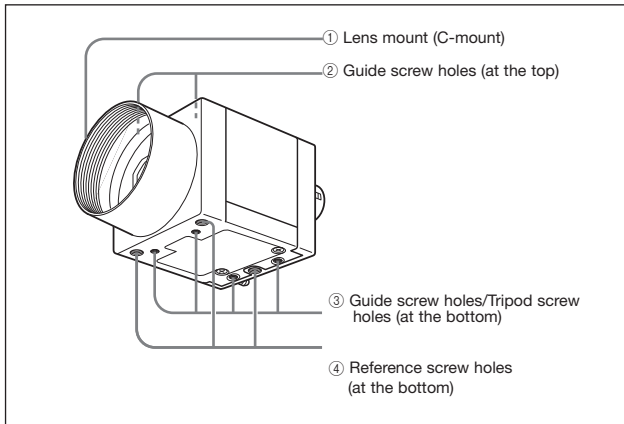


(Lens characteristics and light source characteristics excluded.)

Specifications

XCL-U100	
Type	B/W
Image device	1/1.8 type Progressive scan IT CCD
Standard picture size (H) × (V)	1,600 × 1,200 pixels
Cell size (H) × (V)	4.4 μm × 4.4 μm
Resolution depth	8/10/12 bits/pixels (Default: 8)
Lens mount	C mount
Digital interface	PoCL (Power over Camera Link) / Standard Camera Link, Base Configuration
Frame rate	15 fps
Output data clock	36 MHz (1 tap)
Sensitivity	400 lx, F5.6 (0 dB)
Minimum illumination	1 lx (GAIN +18 dB, F1.4)
Gain control	0 to +18 dB
Readout mode	Normal / Binning / Partial scan
Shutter speed	2 to 1/10,000 s
Shutter mode	External trigger shutter
Extended signal output	DVAL / EXPOSURE / GND output (selectable)
Power requirements	DC +12 V (10 to 15 V: DC IN connector/10 to 13 V: DIGITAL IF connector)
Power consumption	2.2 W
Dimensions	29 (W) × 29 (H) × 30 (D) mm (not including projecting parts)
Mass	Approx. 55 g
Operating temperature	-5 to +45°C
Storage temperature	-30 to +60°C
Operating humidity	20 to 80% (no condensation)
Storage humidity	20 to 95% (no condensation) 0 to +40°C
Vibration resistance	10 G (20 Hz to 200 Hz)
Shock resistance	70 G 75,300 hours (Approx. 8.6 years)
Supplied accessories	Lens mount cap (1), Operating Instructions (1)

Location and Function of Parts and Controls

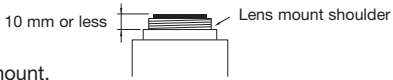


① Lens mount (C-mount)

Attach any C-mount lens or other optical equipment.

Note

The lens must not project more than 10 mm or less from the lens mount shoulder.



When you use the camera with the lens attached, the resolution of the image output from the camera may differ according to the performance of the lens. Note it when you select a lens. The performance of a lens may change according to the aperture level. If the resolution is not enough, adjust the aperture level.

② Guide screw holes (at the top)

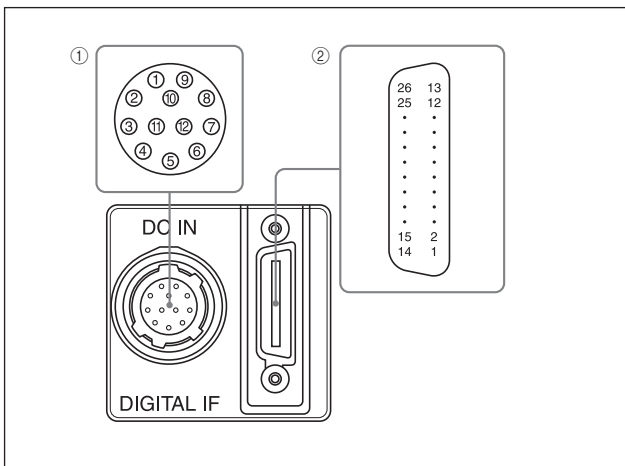
③ Guide screw holes/Tripod screw holes (at the bottom)

When using a tripod, use these four screw holes to attach a VCT-333I tripod adaptor.

④ Reference screw holes (at the bottom)

These precision screw holes are for locking the camera module. Locking the camera module into these holes secures the optical axis alignment.

Rear Panel



① DC IN (DC power input) connector (12-pin)

You can connect a camera cable CCXC-12P05N etc. to input the +12 V DC power supply. The pin configuration of this connector is as follows. You can operate the camera without using this connector when using a PoCL-compatible camera module interface board. For details please see Connector Pin Assignments.

② DIGITAL IF (Interface) connector (26-pin miniconector)

Camera Link Base Configuration:

You can connect a Camera Link cable to this connector to control a camera module from a host device utilizing the serial communication protocol while outputting a video signal from the camera module. If you use a camera module interface board with support for PoCL, you can also supply power from this connector. You can input the external trigger signal via the 26-pin mini connector and operate a camera module in the external trigger mode. Please see Connector Pin Assignments for the relation of the DIGITAL IF (interface) connector and the input/output signals.

Connector Pin Assignments

① DC IN (DC power input) connector (12-pin)

Pin No.	Signal	Pin No.	Signal
1	Ground	7	NC
2	+12 V DC	8	Ground
3	Ground	9	NC
4	NC	10	Signal output*
5	Ground	11	Trigger pulse input
6	NC	12	Ground

* Signal output from the Tenth pin of 12 pins connector
You can select one of the following signals according to the setting.
Ground / DVAL output / Exposure pulses output
The default setting in the factory is Ground.

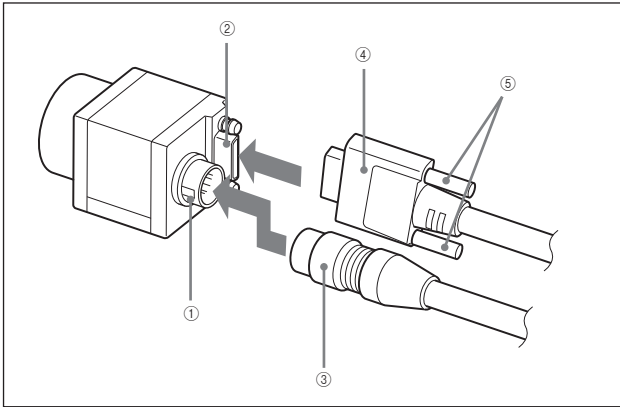
② DIGITAL IF (Interface) connector (26-pin miniconector)

Camera Link Base Configuration

Pin No.	Signal	Pin No.	Signal
1	Power supply or Ground	14	INNER_SHIELD (GND)
2	X0- output (signal)	15	X0+ output (signal)
3	X1- output (signal)	16	X1+ output (signal)
4	X2- output (signal)	17	X2+ output (signal)
5	XCLK- output (signal)	18	XCLK+ output (signal)
6	X3- output (signal)	19	X3+ output (signal)
7	SerTC+ (signal)	20	SerTC- (signal)
8	SerTFG- (signal)	21	SerTFG+ (signal)
9	TRIG- input (signal)	22	TRIG+ input (signal)
10	NC	23	NC
11	NC	24	NC
12	NC	25	NC
13	INNER_SHIELD (GND)	26	Power supply or Ground

* About the 1st pin and 26th pin of the 26-pin miniconector
The connection differs depending on the type of camera module interface board you use.
In the case of PoCL support: Both the 1st pin and 26th pin are POWER (power supply)
In the case of non-PoCL support: Both the 1st pin and 26th pin are INNER_SHIELD (Ground)

Connecting the cables



- ① DC IN connector
- ② DIGITAL IF (Interface) connector
- ③ Camera cable
- ④ Camera link cable
- ⑤ Fastening screws

Connect the camera cable to the DC IN connector and the Camera Link cable to the DIGITAL IF (interface) cable respectively. If you use a camera module interface board with support for PoCL, you can operate the camera even if you do not connect the camera cable to the DC IN connector. When you connect the Camera Link cable, turn the two fastening screws on the connector to secure the cable tightly. Connect the other end of the camera cable to the DC-700/700CE and the other end of the Camera Link cable to the camera module interface board.

When using the camera with a PoCL connection, make sure you connect a PoCL compatible cable. Connecting a cable that is not compatible with PoCL (non-PoCL) may cause a malfunction of the camera or camera module interface board.

Controlling the camera from the host device

You can control the camera from host device such as a PC. The following table shows the control functions.

Control functions	Description	
Operating mode	Normal/Trigger	
Shutter speed	Normal	2 to 1/10,000 s
	Trigger edge	2 to 1/10,000 s
	Trigger pulse width	Setting by trigger pulse width
Gain	0 to +18 dB	
Partial Scan	OFF/ON	
Edge detection, Edge emphasis	OFF/ON	
Binarization	OFF/ON	
Gamma control	OFF/ON (mode1 to mode 7)	
3 x 3 Image filtering	OFF/ON	
Video output switch	12 bits/10 bits/ 8 bits	
External trigger input	26 pin connector/ 12 pin connector	
Switch output tap	1 Tap/ 2 Tap	
White balance	RESET/MANUAL/ONE PUSH (AUTO)	
Switch color output	RAW data / RGB data	

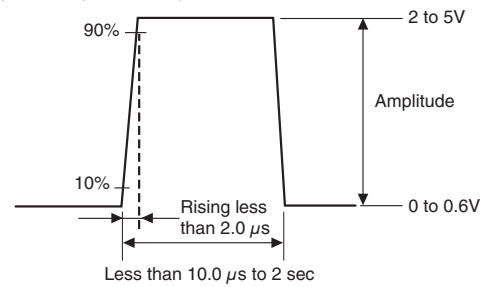
Note

Make sure to supply power to the camera module and confirm that the camera module is operating before inputting a trigger signal. If you input trigger signal to a camera module without the power supplied, this may cause a malfunction of the camera module.

Trigger signal specifications

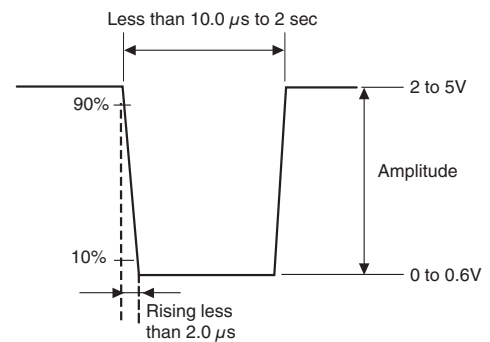
DC IN terminal

(When positive pole is set)



Input Impedance: Stated in the voltage determined at more than 10 kΩ.

(When negative pole is set)



Input Impedance: Stated in the voltage determined at more than 10 kΩ.

DIGITAL IF terminal

Convert the signal which meets the specifications above into LVDS format (3.3V power drive IC output), and inputs the converted signal.

Specification for the External Trigger Signal

Amplitude : LVDS using 3.3 volt IC

Connections : Input a TRIG (-) signal to the 9th pin

: Input a TRIG (+) signal to the 22nd pin

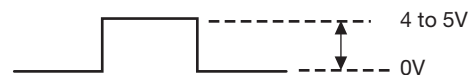
Note that the signal level cannot be recognized correctly by the camera if it does not meet the following conditions.

H level: 1.5 V to 1.7V
L level: 0.8 V to 1.0V

Polarity: positive



DVAL/Exposure output specific (only DC IN terminal)



Stated in the voltage of when terminating at more than 10 kΩ