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XC-HR50
XC-HR57

Non-TV Output | Progressive Scan | *1 1/3 Type CCD | *2 1/2 Type CCD | Square Pixels | C Lens Mount | VS Output
VGA Output | 1/60 Sec 1fc Non-interlace | Partial Scan | HD VD External Sync | Restart Reset | Long Exposure | Normal Shutter
Mode 1 (Non-Reset Mode) External Trigger Shutter | Mode 2 (Non-Reset Mode) External Trigger Shutter

*1 :XC-HR50
*2 :XC-HR57

Switch setting P72
Connection Diagram P74



Outline

The XC-HR50 and XC-HR57 are monochrome camera modules with full pixel read-out. The XC-HR50 incorporates a 1/3-type double scan CCD, and the XC-HR57 incorporates a 1/2-type double scan CCD. Both cameras have VGA resolution (648 (H) × 494 (V)) output at 60 frames/sec, making them ideal for high-speed image capturing. Relying on high-density mounting technology, these cameras are the same size as other Sony cameras in the XC-HR series and XC-E series, which increases their mechanical compatibility. These compact (29 (W) × 29 (H) × 30 (D) mm) double-speed progressive scan cameras are also lightweight and have a short tact time.

Features

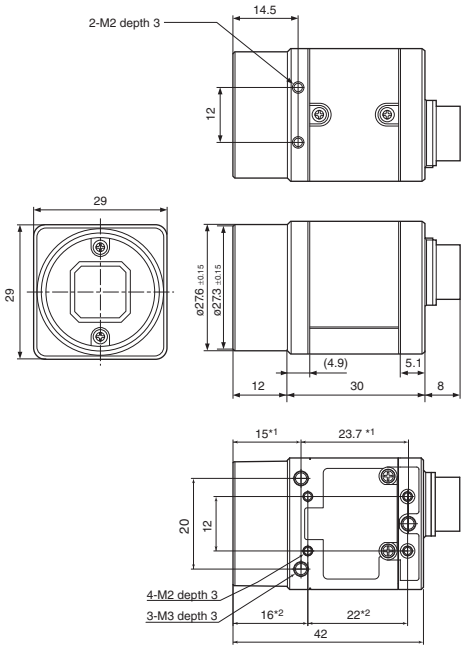
- XC-HR50: 1/3-type PS IT CCD
  XC-HR57: 1/2-type PS IT CCD
  - Double Scan CCD
  - The CCD has square pixels eliminating the need for aspect ratio conversion.
  - VGA resolution (648 (H) × 494 (V) pixels) image capturing at a speed of 60 fps.
- Compact and lightweight
  29 (W) × 29 (H) × 30 (D) mm, Approx. 50 g
- Partial scan (at restart/reset ON, Binning OFF) Up to 240 fps. (Effective line: 102 lines)
- Various mode settings are selectable by changing the setting of a rear panel
- External trigger shutter
  - Restart/Reset
  - Mode 1 (non-reset mode)
  - Mode 2 (Reset mode)
- High Shock and Vibration Resistance
- C-mount

Accessories

- Compact camera adaptor
  - DC-700/700CE
- 12-pin camera cable (CE standard)
  - CCXC-12P02N (2 m)
  - CCXC-12P05N (5 m)
  - CCXC-12P10N (10 m)
  - CCXC-12P25N (25 m)
- Tripod adaptor
  - VCT-333I

Dimensions

Camera body of all XC-HR models



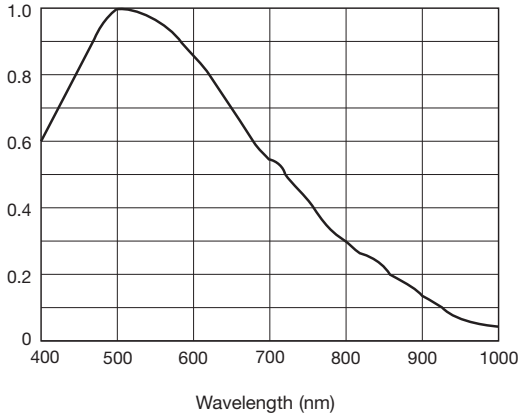
*1: for 3-M3 screw
*2: for 4-M2 screw

Unit: mm

Spectral Sensitivity Characteristics

- **XC-HR50/HR57**
  (Typical Values)

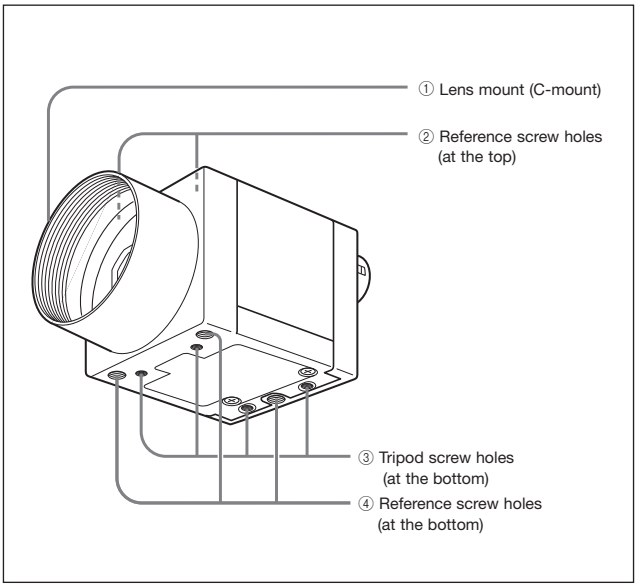
Relative sensitivity



Wavelength (nm)

(Lens characteristics and light source characteristics excluded.)

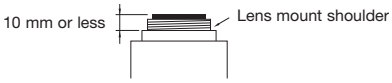
Location and Function of Parts and Controls



① Lens mount (C-mount)
Attach any C-mount lens or other optical equipment.

Note

Be sure that the lens does not project more than 10 mm from the lens mount.



② Reference screw holes (at the top)
These screw holes help to lock the camera module.

③ Tripod screw holes (at the bottom)
These four screw holes on the bottom are for installing the camera module on a tripod. To install on a tripod, you will need to install the VCT-333I tripod adaptor using these holes on the bottom of the camera.

④ Reference screw holes (at the bottom)
These precision screw holes are for locking the camera module. Locking the camera module using these holes secures the optical axis alignment.

Specifications

	XC-HR50	XC-HR57
Image size	VGA	
Image device	1/3-type PS IT CCD	1/2-type PS IT CCD
Effective picture elements (H × V)	659 × 494	
Effective lines (H × V)	648 × 494	
Cell size (H × V)	7.4 μm × 7.4 μm	9.9 μm × 9.9 μm
Lens mount	C-mount	
Sync system	Internal/External (Automatically switched according to input signal)	
External sync signal input	HD/VD (HD/VD level: 2 V to 5 Vp-p, 75 Ω)	
Allwable frequency deviation of external synchronization	±1% (in horizontal sync frequency)	
H Jitter	Less than 20 nsec	
Scanning system	Non-interlace Progressive scan	
Video output mode	Binning: 2-line combined output 120 fps/Normal: 1-line sequential output 60 fps	
Video output	1.0 Vp-p, sync negative, 75 Ω, unbalanced	
Horizontal frequency	31.468 kHz	
Vertical frequency	59.94 MHz (normal mode), 119.88 Hz (binning mode)	
Horizontal resolution	500 TV lines	
Sensitivity	400 lx F5.6 (γ=1, FIX GAIN (0 dB))	
Minimum illumination	1 lx (F1.4, γ=1, GAIN 18 dB)	
SNR	58 dB (0 dB GAIN)	
Gain	Manual (0 dB to 18 dB)/Fix (0 dB) (adjustable on the rear panel)	
Gamma	1 (fixed)	
White clip	820 mV ±70 mV (F1.4, FIX GAIN (0 dB))	
Shutter	Normal shutter, Restart/Reset, External trigger shutter (Mode 1/Mode 2)	
Normal shutter speed (s)	1/100, 1/125, 1/250, 1/500, 1/1,000, 1/2,000, 1/4,000, 1/10,000, 1/15,000, 1/30,000	
External trigger shutter speed (s)	DIP switch settings: 1/100, 1/125, 1/250, 1/500, 1/1,000, 1/2,000, 1/4,000, 1/10,000, 1/25,000, 1/50,000, 1/100,000 Trigger pulse width settings: 1/4 to 1/100,000	
External trigger	Polarity: +, Width: 2 μs to 250 ms, Input impedance: 10 kΩ or more	
Partial scan	R/R mode Binning off: max 240 fps (effective line: 102 lines) Binning on: max 362 fps (effective line: 59 lines)	
	External trigger shutter mode (MODE 1) Binning off: max 240 fps (effective line: 100 lines) Binning on: max 240 fps (effective line: 105 lines)	
Power requirements	DC 12 V (10.5 V to 15.0 V)	
Power consumption	1.8 W	
Dimensions (W × H × D)	29 × 29 × 30 mm (excluding protrusions)	
Mass	Approx. 50 g	
Operating temperature	–5°C to +45°C	
Storage temperature	–30°C to +60°C	
Performance guarantee temperature	0°C to 40°C	
Operating humidity	20% to 80% (no condensation)	
Storage humidity	20% to 95% (no condensation)	
Vibration resistance	10 G (20 Hz to 200 Hz 20 minutes for each direction-x, y, z)	
Shock resistance	70 G	
MTBF	88,044 hours (Approx. 10.1 years)	
Regulatory compliance	UL6500, FCC/ICES-003: Class A, CE: EN61326, AS/NZ: EN61326, KC: KN22/KN24: Class A	
Supplied accessories	Lens mount cap (1), Operating instructions (1)	

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