

SONY[®]**B/W VIDEO CAMERA**

XC-ES50/ES50CE
XC-ES30/ES30CE
XC-EI50/EI50CE
XC-EI30/EI30CE
XC-EU50/EU50CE

Component/OEM**OUTLINE**

The XC-E Series are compact, light-weight one-piece black and white cameras incorporating the latest 1/2 and 1/3 type Interline (IT) CCD which produces new levels of picture detail. With dimensions of 29 x 29 x 32 mm (1 3/16 x 1 3/16 x 1 5/16 inches), these cameras can easily be installed in places where installation was previously difficult for other larger cameras.

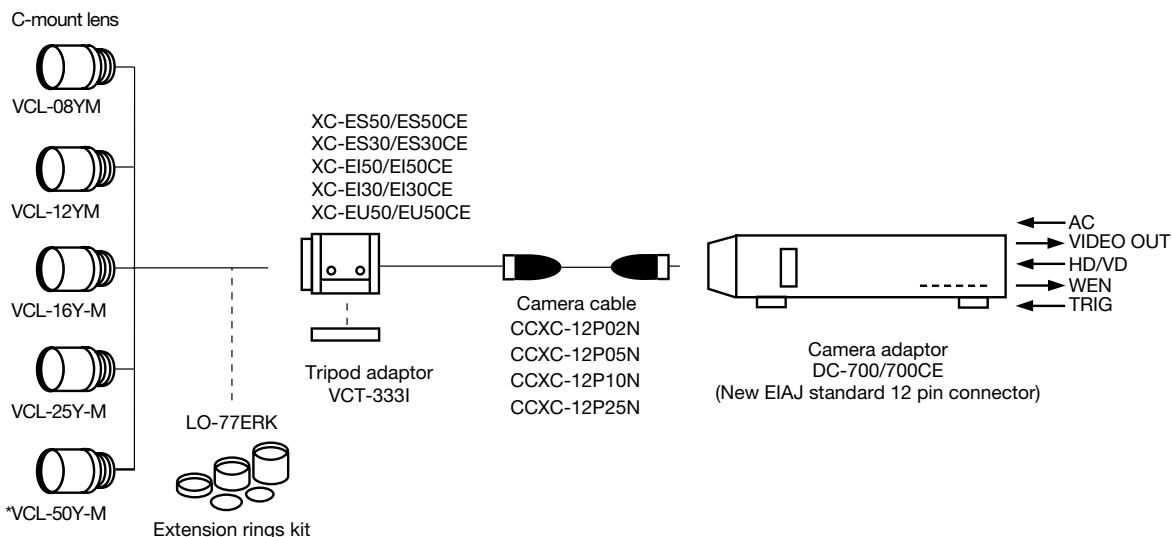
The XC-E Series offer three different model ranges that only differ in spectral sensitivity to suit various application environments. The XC-ES Series (XC-ES50/ES50CE and XC-ES30/ES30CE) are standard models for general use under visible light conditions. The XC-EI Series (XC-EI50/EI50CE and XC-EI30/EI30CE) offer excellent near-infrared sensitivity. Under low light conditions or when used with IR LED illumination systems, these cameras provide clear images. The XC-EU Series (XC-EU50/EU50CE) offer near-ultraviolet sensitivity in the i-line, or 365 nm, range. The short wavelength allows the XC-EU Series to capture very fine detail.

All models have identical dimensions and controls, making them easy to interchange. A variety of settings are available for differing subject and lighting conditions. All camera control switches are accessible from the outside of the camera. Excellent vibration and shock characteristics make these cameras ideal for demanding machine vision applications.

FEATURES

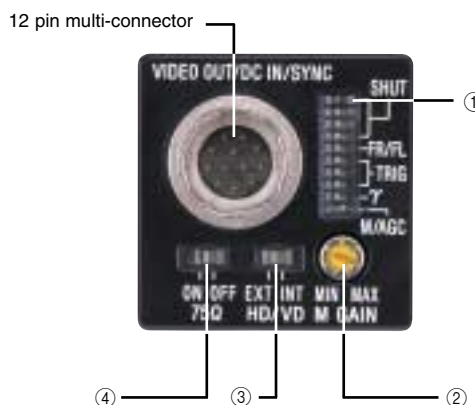
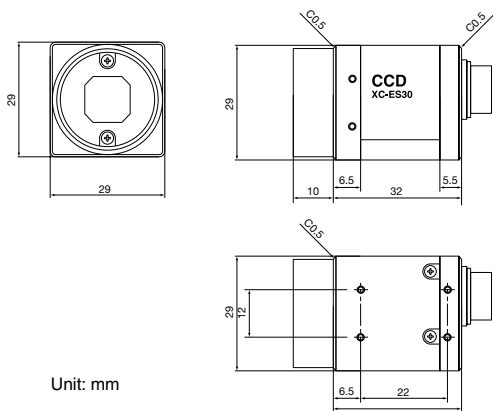
- XC-ES50/ES50CE/EI50/EI50CE: 1/2 type IT CCD
- XC-ES30/ES30CE/EI30/EI30CE: 1/3 type IT CCD
- XC-EU50/EU50CE: 1/2 type IT CCD
- Compact and light weight: 29 (W) x 29 (H) x 32 (D) mm, 50 g (1 3/16 x 1 3/16 x 1 5/16 inches, 2 oz)
- Near-infrared sensitivity (XC-EI50/EI50CE, XC-EI30/EI30CE)
- Near-ultraviolet sensitivity (XC-EU50/EU50CE)
- Minimum illumination at F1.4
 - 0.3 lx (XC-ES50/ES50CE, XC-ES30/ES30CE)
 - 0.1 lx (XC-EI50/EI50CE)
 - 0.2 lx (XC-EI30/EI30CE)
- High S/N Ratio: 60 dB
- Electronic shutter function (1/100 - 1/10,000 s)
- Flexible trigger shutter function
- 2:1 interlaced/non-interlaced
- Frame/field exposure
- Restart/reset function
- Synchronization: internal/external (HD/VD, VS)
- High shock and vibration tolerance

CONNECTION DIAGRAM

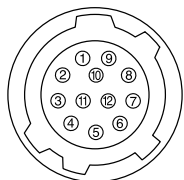


*Only VCL-50Y-M is applicable to the XC-EU50/EU50CE.

DIMENSIONS & REAR PANEL



12 Pin multi-connector



| PIN No. | External sync (HD/VD) | Internal sync (HD/VD) |
|---------|-----------------------|-----------------------|
| 1 | GND | GND |
| 2 | +12 V | +12 V |
| 3 | GND | GND |
| 4 | Video output | Video output |
| 5 | GND | GND |
| 6 | *1 HD input | HD output |
| 7 | *1 VD input | VD output |
| 8 | GND | GND |
| 9 | - | - |
| 10 | *2 WEN output | *2 WEN output |
| 11 | TRIG input | TRIG input |
| 12 | GND | GND |

*1 HD/VD input is required when using restart, reset mode.

*2 WEN output works only when in external trigger shutter mode.

● Factory setting mode of rear panel

| No. | Switch name | Factory-setting mode | |
|-----|---------------------------------------|---|--------|
| ① | Shutter speed/Mode setting DIP switch | Dip switch 1-4: Shutter speed | OFF |
| | | Dip switch 5: FRAME/FIELD | FRAME |
| | | Dip switch 6-8: External trigger shutter mode, restart/reset mode | Normal |
| | | Dip switch 9: Gamma ON/OFF | OFF |
| | | Dip switch 0: GAIN | Manual |
| ② | Manual GAIN (M GAIN) control knob | Twelve o'clock position | |
| ③ | HD/VD signal input/output switch | EXT | |
| ④ | 75 Ω termination switch | ON | |

ACCESSORIES

Compact camera adaptor DC-700/700CE

- Compact, lightweight (700 g, 1 lb 8 oz)
- External sync IN / OUT
- Trigger input / WEN output
- New EIAJ standard 12 pin connector
- Dimensions: 110(W) x 53(H) x 160(D) mm (4 3/8 x 2 1/8 x 6 3/8 inches)



12 pin camera cable (CE standard)

- CCXC-12P02N (2m)
- CCXC-12P05N (5m)
- CCXC-12P10N (10m)
- CCXC-12P25N (25m)



Tripod adaptor VCT-333I

- ABS
- Approx. 6.1 g (0.2 oz)
- Dimensions: 18(W)x6(H)x2.9(D)mm (23/32 x 1/4 x 1/8 inches)



Standard model

XC-ES50/ES50CE XC-ES30/ES30CE



Near IR model

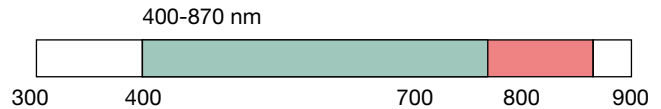
XC-EI50/EI50CE XC-EI30/EI30CE



■ Applicable wavelength range



■ Applicable wavelength range



SPECIFICATIONS

| | XC-ES50 | XC-ES50CE | XC-ES30 | XC-ES30CE | XC-EI50 | XC-EI50CE | XC-EI30 | XC-EI30CE |
|----------------------------|---|---------------------|--|---------------------|---|---------------------|--|---------------------|
| Image device | 1/2 type IT CCD | | 1/3 type IT CCD | | 1/2 type IT CCD | | 1/3 type IT CCD | |
| Effective picture elements | 768 (H) x 494 (V) | 752 (H) x 582 (V) | 768 (H) x 494 (V) | 752 (H) x 582 (V) | 768 (H) x 494 (V) | 752 (H) x 582 (V) | 768 (H) x 494 (V) | 752 (H) x 582 (V) |
| Signal system | EIA (standard) | CCIR (standard) | EIA (standard) | CCIR (standard) | EIA (standard) | CCIR (standard) | EIA (standard) | CCIR (standard) |
| Horizontal frequency | 15.734 kHz | 15.652 kHz | 15.734 kHz | 15.652 kHz | 15.734 kHz | 15.652 kHz | 15.734 kHz | 15.652 kHz |
| Vertical frequency | 59.94 Hz | 50 Hz | 59.94 Hz | 50 Hz | 59.94 Hz | 50 Hz | 59.94 Hz | 50 Hz |
| Cell Size | 8.4 x 9.8 μm | 8.6 x 8.3 μm | 6.35 x 7.4 μm | 6.5 x 6.25 μm | 8.4 x 9.8 μm | 8.6 x 8.3 μm | 6.35 x 7.4 μm | 6.5 x 6.25 μm |
| Lens mount | C mount | | | | | | | |
| Flange back | 17.526 mm | | | | | | | |
| Sync system | Internal / External (auto) | | | | | | | |
| External sync system | HD / VD (2 to 5 Vp-p), VS | | | | | | | |
| External sync frequency | +/- 1% | | | | | | | |
| Jitter | Less than +/- 50 nsec | | | | | | | |
| Scanning system | 2:1 Interlaced | | | | | | | |
| Video output | 1.0 Vp-p, negative, 75 Ω unbalanced | | | | | | | |
| Horizontal resolution | 570 TV lines | 560 TV lines | 570 TV lines | 560 TV lines | 570 TV lines | 560 TV lines | 570 TV lines | 560 TV lines |
| Sensitivity | 400 lx F5.6 (γ = ON MIN GAIN, NO IR cut filter) | | 400 lx F4 (γ = ON MIN GAIN, NO IR cut filter) | | 400 lx F11 (γ = ON MIN GAIN, NO IR cut filter) | | 400 lx F8 (γ = ON MIN GAIN, NO IR cut filter) | |
| Minimum illumination* | 0.3 lx | | 0.3 lx | | 0.1 lx | | 0.2 lx | |
| S/N ratio | 60 dB | | | | | | | |
| Gain | AGC (0-18 dB) / Manual (0-18 dB) Selectable | | | | | | | |
| Gamma | ON / OFF | | | | | | | |
| Normal shutter | 1/100 to 1/10,000 S | 1/120 to 1/10,000 S | 1/100 to 1/10,000 S | 1/120 to 1/10,000 S | 1/100 to 1/10,000 S | 1/120 to 1/10,000 S | 1/100 to 1/10,000 S | 1/120 to 1/10,000 S |
| External trigger shutter** | 1/4 to 1/10,000 S | 1/4 to 1/8,000 S | 1/4 to 1/10,000 S | 1/4 to 1/8,000 S | 1/4 to 1/10,000 S | 1/4 to 1/8,000 S | 1/4 to 1/10,000 S | 1/4 to 1/8,000 S |
| Power requirements | DC12 V (+9 to 16 V) | | | | | | | |
| Power consumption | 1.6 W | | 1.4 W | | 1.6 W | | 1.4 W | |
| Dimensions | 1 3/16 x 1 3/16 x 1 5/16 inches (29 (W) x 29 (H) x 32 (D) mm) | | | | | | | |
| Weight | 2 oz (50 g) | | | | | | | |
| Operation temp./mois. | -10 to +50°C (14 to +122°F) / 20 to 80% | | | | | | | |
| Storage temp./mois. | -20 to +60°C (-4 to +140°F) / 20 to 95% | | | | | | | |
| Vibration | 10 G (20 to 200 Hz) | | | | | | | |
| Shock resistance | 70 G | | | | | | | |
| MTBF | 126,000 hrs. | | | | | | | |
| Regulatory compliance | UL1492, FCC Class A Digital Device, CE (EN50081-2 + EN50082-2), AS4251.1 + AS4252.2 | | | | | | | |
| Supplied accessories | Lens mount cap (1), Operating instructions (1) | | | | | | | |

* (F1.4, AGC ON, without IR cut filter) ** Using Dip switch on the rear panel or Using trigger pulse width

UV model

The XC-EU50/EU50CE are compact, and light-weight CCD cameras that have near-ultraviolet sensitivity in the i-line, or 365 nm, range. Examples of typical application areas are PCB and solder inspection, document proofing, microscopy, medical and cosmetics applications. The short wavelength allows the XC-EU50/EU50CE cameras to capture clearly very fine detail and surface structures, which cannot be detected using visible or IR lighting, including very small scratches, dust or blemishes, as well as special fluorescent materials.

XC-EU50/EU50CE



■ Applicable wavelength range



SPECIFICATIONS

| | XC-EU50 | XC-EU50CE |
|----------------------------|---|---------------------------|
| Image device | 1/2 type IT CCD | |
| Signal system | EIA | CCIR |
| Effective picture elements | 768 x 494 | 752 x 582 |
| Cell size | 8.4 (H) x 9.8 (V) μ m | 8.6 (H) x 8.3 (V) μ m |
| Horizontal frequency | 15.734 kHz | 15.625 kHz |
| Vertical frequency | 59.94 Hz | 50 Hz |
| Lens mount | C mount | |
| Flange back | 17.526 mm | |
| Sync system | Internal / External (auto) | |
| External sync system | HD / VD (2 to 5 Vp-p), VS | |
| External sync frequency | +/- 1% | |
| Jitter | Less than +/- 50 nsec | |
| Scanning system | 2:1 Interlaced | |
| Video output | 1.0 Vp-p, negative, 75 Ω unbalanced | |
| Horizontal resolution | 570 TV lines | 560 TV lines |
| S/N ratio | 60 dB | |
| Gain | AGC / Manual Selectable | |
| Gamma | ON / OFF | |
| Normal shutter | 1/100 to 1/10,000 s | 1/120 to 1/10,000 s |
| External trigger shutter | 1/4 to 1/10,000 s | 1/4 to 1/8,000 s |
| Power requirements | DC12 V (+9 to 16 V) | |
| Power consumption | 1.6 W | |
| Dimensions | 1 3/16 x 1 3/16 x 1 5/16 inches (29 (W) x 29 (H) x 32 (D) mm) | |
| Weight | 2 oz (50 g) | |
| Operation temp./mois. | -5 to +45°C (-23 to +113°F) / 20 to 80% (no condensing) | |
| Storage temp./mois. | -20 to +50°C (-4 to +122°F) / 20 to 95% (no condensing) | |
| Vibration | 10 G (20 to 200 Hz) | |
| Shock resistance | 70 G | |
| MTBF | 126,000 hrs. | |
| Regulatory compliance | UL1492, FCC Class A Digital Device, CE (EN50081-2 + EN50082-2), EMC (AS35448) | |
| Supplied accessories | Lens mount cap (1), Operating instructions (1) | |

Product information
is available on the
ISP Home Page

Sony online <http://www.sony.co.jp/ISP/>

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Product Information

Information including product features and catalogs

Document & Software

Product document information and sample software
downloads

Product catalog

User's Guide
XC-E series
XC-EU50/EU50CE

Application Guide

Instruction Manual

Command List

Sample software

Sony Electronics Inc.
One Sony Drive
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Sales: Shenzhen Sunnywale Inc, www.sunnywale.com, awin@sunnywale.com, Wechat: 9308762

MK7726V1IW01AUG

IS-1112-B

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Printed in USA 9/01