



FCB-EX SERIES

FCB-EX780B/EX780BP

FCB-EX78B/EX78BP

FCB-EX480B/EX480BP

FCB-EX48B/EX48BP

COLOR BLOCK CAMERAS

Component/OEM

The new Sony FCB-EX Series of color block cameras represent an evolution in security dome, police vehicle and traffic monitoring applications. Incorporating familiar and convenient features such as Spot AE, Auto ICR (IR Cut filter Removal)*¹, quick camera control via a high-speed serial interface (max. 38.4 Kb/s), and various customizable settings, these FCB-EX Series cameras offer superb flexibility and easy operation.

The FCB-EX Series cameras are equipped with new and unique surveillance features such as an E-Flip function that electrically flips the picture for correct image display and an alarm function that allows changes to be detected within any given area of the picture. In addition, these FCB-EX Series cameras feature an advanced Privacy Zone Masking function for sophisticated masking controls - a necessity in many surveillance applications. With these new and unique features, the FCB-EX Series cameras are the ideal choice for indoor and outdoor dome applications.

Incorporating high-performance Digital Signal Processing (DSP), the FCB-EX Series offers greatly enhanced picture quality and operability compared to conventional block cameras. Moreover, all of these FCB-EX Series cameras use lead-free solder and halogen-free mounting boards, and achieve low power consumption. The dimensions and mounting-hole position of these new FCB-EX Series cameras are exactly the same as those of earlier FCB-EX Series cameras*² allowing them to be easily interchanged. Combining superb picture quality and a variety of unique and convenient features, the new FCB-EX Series cameras are the perfect match for demanding security dome applications.

*¹ FCB-EX780B/EX780BP and FCB-EX480B/EX480BP only

*² FCB-EX780S/EX780SP, FCB-EX480A/EX480AP and FCB-EX48A/EX48AP

- Advanced Privacy Zone Masking function (max. 24 masking blocks)
- E-Flip function
- Newly developed Alarm function
- Picture freeze during zoom, focus, preset and lens initializing
- Key switch connector (CN701) and dual DC/video connector (CN903)*¹
- High-performance Digital Signal Processing (DSP)
- High-speed serial interface (max. 38.4 Kb/s) TTL signal level control (VISCA™ protocol)
- Auto ICR (IR Cut filter Removal)*²
- Image stabilizer*³
- Various customizable settings
- Internal/External sync
- Low power consumption (1.6 W with motors inactive)
- EEPROM backup system without battery
- Lead-free solder and halogen-free mounting boards

*¹ DC/video connector (CN903): FCB-EX480B/480BP and FCB-EX48B/EX48BP only

*² FCB-EX780B/EX780BP and FCB-EX480B/EX480BP only

*³ FCB-EX780B/EX780BP and FCB-EX78B/EX78BP only

CHANGING

THE WAY

BUSINESS

COMMUNICATES

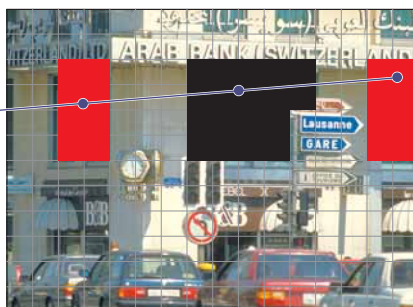


FEATURES

Advanced Privacy Zone Masking



Original image



Masking image

Maximum 24 positions within 160 (H) x 120 (V) can be preset. (8 positions/2 colors)

With the advanced Privacy Zone Masking function, unwanted or prohibited areas within an image can be masked appropriately. A maximum of 24 masking areas can be preset to any of 160 horizontal and 120 vertical masking blocks, and up to eight block positions with two colors can be selected together. In addition when zoom is engaged, the size of a masking areas will adjust in proportion to the zoom position. The masking position can be made to interlock with a security dome's pan/tilt to achieve a comprehensive masking operation. For the user convenience, a coordinate grid can be superimposed to easily locate the masking position.

Masking Controls

| | |
|--|-------------------|
| Maximum number of preset masking blocks | 24 blocks |
| Maximum number of masking blocks to be displayed | 8 blocks |
| Resolution of masking blocks | 160 (H) x 120 (V) |
| Interlock with zoom | Yes |
| Interlock with pan/tilt ^{*1} | Yes |
| Maximum colors to be preset | 28 ^{*2} |
| Maximum colors to be displayed | 2 ^{*2} |
| Translucent masking | Yes |
| Gray scale | Yes ^{*3} |
| Individual masking On/Off | Yes |
| Interlock speed setting ^{*1} | Yes |
| Title/day/time superimposition | Yes |

^{*1} When used in a security dome

^{*2} Including translucent color

^{*3} 6 gradations selectable

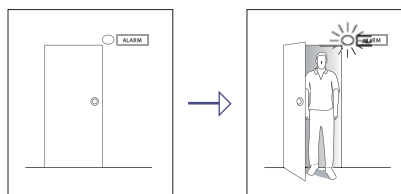
E-Flip (Electrical Flip)

The FCB-EX Series cameras have an E-Flip function that electrically flips an image upside down. In a dome application for example, if a tracked object moves beneath the camera dome, the image can be inverted to maintain the correct display. This E-Flip function realises higher reliability as compared to a mechanical flip function.



Alarm Function

The FCB-EX Series provide a new Alarm function which can detect changes within an area of the picture designated by the user. When a change in AF, AE or both AF and AE is detected, the camera outputs an alarm trigger signal to the external equipment via the VISCA protocol. In combination with the Spot AE, these cameras also detect changes of luminance level, and output an alarm signal. The detecting area can be applied to any of 16 vertical and 16 horizontal blocks.



EXview HAD CCD™

(FCB-EX480B/EX480BP and FCB-EX48B/EX48BP)

Smear



Without
EXview CCD



With
EXview CCD

IR sensitivity



Without
EXview CCD



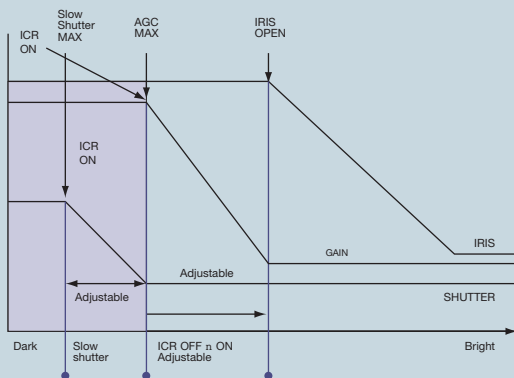
With
EXview CCD

Auto ICR Mode

(FCB-EX480B/EX480BP and FCB-EX48B/EX48BP)

When auto slow shutter is on

IRIS OPEN ▶ GAIN MAX ▶ ICR ON ▶ Slow shutter mode



Day/Night Mode

The FCB-EX Series cameras feature a new “Day/Night” alarm function. These cameras can output an alarm signal via the VISCA protocol in response to a change in the designated brightness/darkness level. In outdoor dome applications for example, a control center can be instructed to turn lights on and off when a Day/Night alarm is received.

EXview HAD CCD™

(FCB-EX480B/EX480BP and FCB-EX48B/EX48BP)

The adoption of Sony EXview HAD CCD technology improves basic camera features, providing advantages over earlier FCB models such as superb sensitivity of 0.7 lx (typical), low smear levels and D-range.

Auto ICR (IR Cut filter Removal) Mode

(FCB-EX780B/EX780BP and FCB-EX480B/EX480BP)

The Auto ICR function automatically switches the settings to attach or remove the IR Cut filter for increased sensitivity. With a set level of darkness, the IR Cut filter is automatically disabled (ICR ON), and the infrared sensitivity is increased. With a set level of brightness, the filter is automatically enabled (ICR OFF). The ICR automatically engages depending on the ambient light, allowing the cameras to be effective in day and night environments.

Image stabiliser

(FCB-EX780B/EX780BP and FCB-EX78B/EX78BP)

The image stabilizer function minimizes the appearance of shaky images caused by low-frequency vibration and maintains a normal horizontal resolution. This function is useful for outdoor surveillance and traffic monitoring applications.

Picture Freeze

The FCB-EX Series is equipped with Picture Freeze function which outputs a freeze-frame picture or a muted picture during zoom, focus, lens initializing, and preset operations. In a dome application for example, if a user does not want to show an image while panning from “A” to “B” points, the camera outputs the “A” point freeze-frame image and then outputs the normal picture once panning is completed.

FCB-EX SERIES LINE-UP



FCB-EX780B/EX780BP



FCB-EX78B/EX78BP



FCB-EX480B/EX480BP

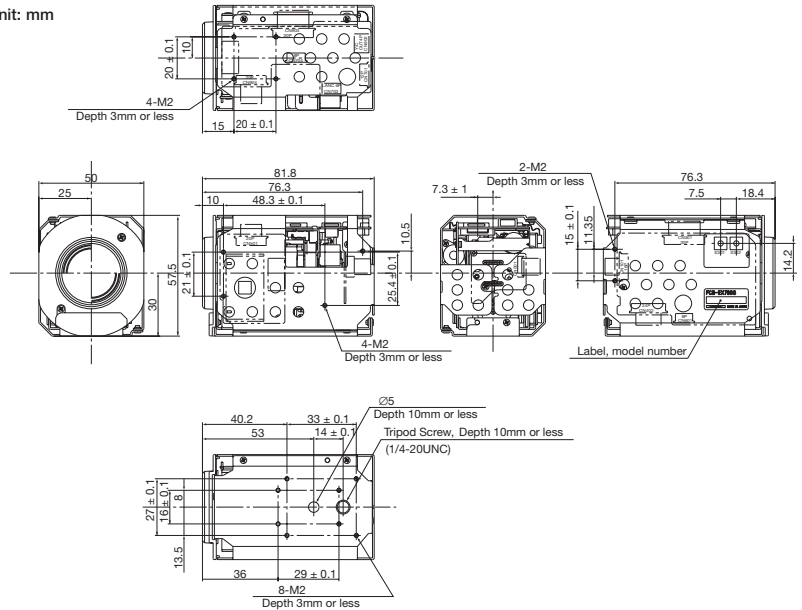


FCB-EX48B/EX48BP

FCB-EX780B/EX780BP

- 1/6 type Super HAD CCD
- 300x zoom ratio (25x optical, 12x digital)
- Auto ICR (IR Cut filter Removal) mode to achieve near-infrared sensitivity
- Image stabilizer
- Advanced Privacy Zone Masking
- E-Flip function
- Alarm function
- Picture Freeze
- Key switch connector (CN701)
- Spot AE
- Electronic shutter/slow shutter
- High-speed serial interface (maximum 38.4 Kb/s)
- TTL signal-level control (VISCA protocol)
- Internal/External sync

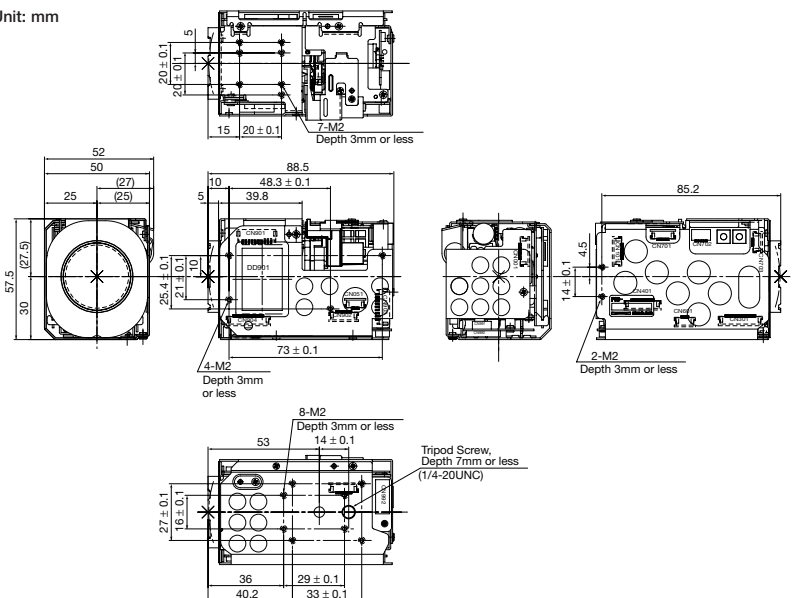
Unit: mm



FCB-EX480B/EX480BP

- 1/4 type EXview HAD CCD
- Extremely low minimum illumination of 0.7 lx (typical)
- Auto ICR (IR Cut filter Removal) mode to achieve near-infrared sensitivity
- 216x zoom ratio (18x optical, 12x digital)
- Advanced Privacy Zone Masking
- E-Flip function
- Alarm function
- Picture Freeze
- Key switch connector (CN701) and DC/video connector (CN903)
- Spot AE
- Electronic shutter/slow shutter
- High-speed serial interface (maximum 38.4 Kb/s)
- TTL signal-level control (VISCA protocol)
- Internal/External sync

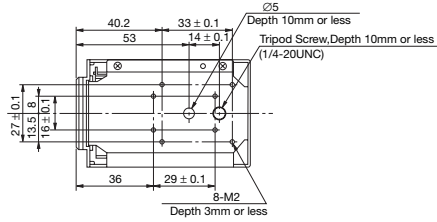
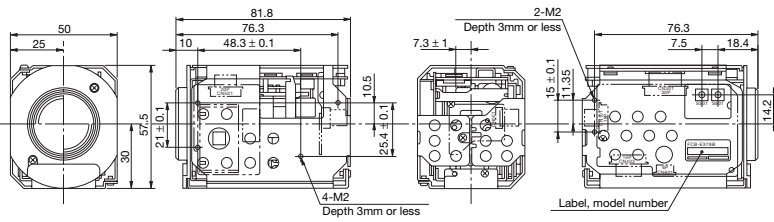
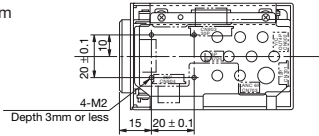
Unit: mm



FCB-EX78B/EX78BP

- 1/6 type Super HAD CCD
- 300x zoom ratio (25x optical, 12x digital)
- Image stabilizer
- Advanced Privacy Zone Masking
- E-Flip function
- Alarm function
- Picture Freeze
- Key switch connector (CN701)
- Spot AE
- Electronic shutter/slow shutter
- High-speed serial interface (maximum 38.4 Kb/s) TTL signal-level control (VISCA protocol)
- Internal/External sync

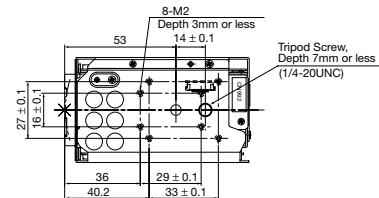
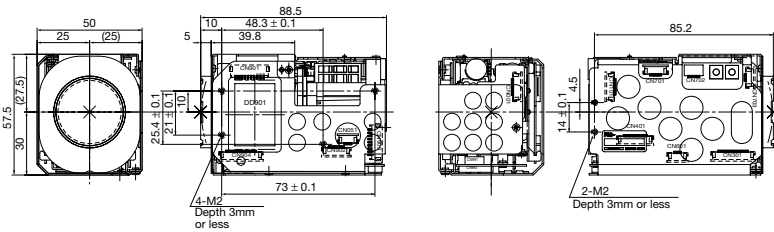
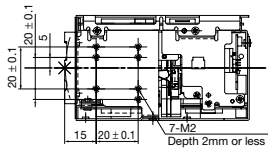
Unit: mm



FCB-EX48B/EX48BP

- 1/4 type EXview HAD CCD
- Extremely low minimum illumination of 0.7 lx (typical)
- 216x zoom ratio (18x optical, 12x digital)
- Advanced Privacy Zone Masking
- E-Flip function
- Alarm function
- Picture Freeze
- Key switch connector (CN701) and DC/video connector (CN903)
- Spot AE
- Electronic shutter/slow shutter
- High-speed serial interface (maximum 38.4 Kb/s) TTL signal-level control (VISCA protocol)
- Internal/External sync

Unit: mm



PIN ASSIGNMENT

CN701 12-pin for Key Switch control

| Pin No. | Name | Level |
|---------|---------|-------|
| 1 | GND | - |
| 2 | GND | - |
| 3 | KEY_AD0 | - |
| 4 | KEY_AD1 | - |
| 5 | KEY_AD2 | - |
| 6 | KEY_AD3 | - |
| 7 | KEY_AD4 | - |
| 8 | KEY_AD5 | - |
| 9 | KEY_AD6 | - |
| 10 | KEY_AD7 | - |
| 11 | NC | - |
| 12 | Strobe | - |

Connector: Molex 52689-1240 FFC (0.5 mm)

CN901 9-pin for DC/video out/VD-Lock Pulse/VISCA

| Pin No. | Name | Level |
|---------|---------------------|---|
| 1 | RxD | CMOS 5.0 V (low: max. 0.8 V, high: min. 2.0 V) Read Data |
| 2 | TxD | CMOS 5.0 V (low: max. 0.1 V, high: min. 4.4 V) Send Data |
| 3 | GND (for RxD & TxD) | - |
| 4 | DC IN | 9.0 ± 3.0V |
| 5 | GND (for DC IN) | - |
| 6 | VBS OUT | 1.0 ± 0.2 V |
| 7 | GND (for VBS OUT) | - |
| 8 | V LOCK PULSE | External VD-Lock Pulse (EX.FV: Negative, 3.0 Vp-p 50% duty) |
| 9 | GND (VL PULSE) | - |

Connector: ELCO 00 6200 509 13000

CN902 4-pin for Y/C video out

| Pin No. | Name | Level |
|---------|--------------------|-------|
| 1 | Y_Out | - |
| 2 | GND (for Y signal) | - |
| 3 | C_Out | - |
| 4 | GND (for C signal) | - |

Connector: JST S4B-ZR-SM3A-TF

CN903* 9-pin for DC/video out

| Pin No. | Name | Level |
|---------|--------------------|------------------------|
| 1 | DC IN | 6.0 V to 12.0 V |
| 2 | GND (for DC IN) | - |
| 3 | NC | - |
| 4 | VBS OUT | Composite video signal |
| 5 | GND (for VBS OUT) | - |
| 6 | Y_OUT | 1.0 ± 0.2 V |
| 7 | GND (for Y signal) | - |
| 8 | C_OUT | - |
| 9 | GND (for C signal) | - |

Connector: JST S9B-ZR-SM3A-TF

* Only for FCB-EX48B/P and FCB-EX480B/P

FCB-EX Series SPECIFICATIONS

| | FCB-EX780B | FCB-EX78B | FCB-EX480B | FCB-EX48B |
|----------------------------|---|-----------|--|-----------|
| Image sensor | 1/6 type Super HAD CCD | | 1/4 type EXview HAD CCD | |
| Number of effective pixels | Approx. 680,000 pixels | | Approx. 380,000 pixels | |
| Lens | 25x zoom, f=2.4 mm (wide) to 60 mm (tele), F1.6 to F2.7 | | 18x zoom, f=4.1 mm (wide) to 73.8 mm (tele), F1.4 to F3.0 | |
| Digital zoom | 12x (300x with optical zoom) | | 12x (216x with optical zoom) | |
| Angle of view (H) | 45° (wide end) to 2.0° (tele end) | | 48° (wide end) to 2.8° (tele end) | |
| Minimum working distance | 35 mm (wide end) to 800 mm (tele end) | | | |
| Sync system | Internal/External (V-Lock) | | | |
| Minimum illumination | 2.5 lx (typical) (50 IRE) | | 0.7 lx (typical) (50 IRE) | |
| S/N ratio | 49 dB | | More than 50 dB | |
| Electronic shutter | 1/1 to 1/10,000 s, 22 steps | | | |
| White Balance | Auto, ATW, Indoor, Outdoor, One-push, Manual | | | |
| Gain | Auto/Manual (-3 to 28 dB, 2 dB steps) | | | |
| AE control | Auto, Manual, Priority mode, Bright, EV compensation, Back-light compensation | | | |
| EV compensation | -10.5 to +10.5 dB (1.5 dB steps) | | | |
| Back-light compensation | On/Off | | | |
| Privacy Zone Masking | On/Off (24 positions) | | | |
| Flicker cancel | Auto | | | |
| Focusing system | Auto (Sensitivity: normal, low), One-push AF, Manual, Infinity, Interval AF, Zoom Trigger AF | | | |
| Picture effect | E-Flip, Neg. Art, Black & White, Mirror Image | | | |
| Camera operation switch | Zoom tele, Zoom wide | | | |
| Video output | VBS: 1.0 Vp-p (sync negative), Y/C Output | | | |
| Camera control interface | VISCA (TTL signal level), baud rate: 9.6 Kb/s, 19.2 Kb/s, 38.4 Kb/s, Stop bit: 1/2 selectable | | | |
| Storage temperature | -20 °C to 60 °C (-4 °F to 140 °F) | | | |
| Operating temperature | 0 °C to 50 °C (32 °F to 122 °F) | | | |
| Power consumption | 6 V to 12 V DC, 1.6 W (motors inactive) 2.7 W (motors active) | | 6 V to 12 V DC, 1.6 W (motors inactive) 2.5 W (motors active) | |
| Mass | Approx. 230 g (8.1 oz) | | | |
| Dimensions (W x H x D) | 50 x 57.5 x 81.8 mm (2 x 2 3/8 x 3 1/4 inches) | | 52 x 57.5 x 88.5 mm (2 1/8 x 2 3/8 x 3 1/2 inches) | |
| | | | 50 x 57.5 x 88.5 mm (2 x 2 3/8 x 3 1/2 inches) | |

| | FCB-EX780BP | FCB-EX78BP | FCB-EX480BP | FCB-EX48BP |
|----------------------------|---|------------|--|------------|
| Image sensor | 1/6 type Super HAD CCD | | 1/4 type EXview HAD CCD | |
| Number of effective pixels | Approx. 800,000 pixels | | Approx. 440,000 pixels | |
| Lens | 25x zoom, f=2.4 mm (wide) to 60 mm (tele), F1.6 to F2.7 | | 18x zoom, f=4.1 mm (wide) to 73.8 mm (tele), F1.4 to F3.0 | |
| Digital zoom | 12x (300x with optical zoom) | | 12x (216x with optical zoom) | |
| Angle of view (H) | 45° (wide end) to 2.0° (tele end) | | 48° (wide end) to 2.8° (tele end) | |
| Minimum working distance | 35 mm (wide end) to 800 mm (tele end) | | | |
| Sync system | Internal/External (V-Lock) | | | |
| Minimum illumination | 2.5 lx (typical) (50 IRE) | | 0.7 lx (typical) (50 IRE) | |
| S/N ratio | 49 dB | | More than 50 dB | |
| Electronic shutter | 1/1 to 1/10,000 s, 22 steps | | | |
| White Balance | Auto, ATW, Indoor, Outdoor, One-push, Manual | | | |
| Gain | Auto/Manual (-3 to 28 dB, 2 dB steps) | | | |
| AE control | Auto, Manual, Priority mode, Bright, EV compensation, Back-light compensation | | | |
| EV compensation | -10.5 to +10.5 dB (1.5 dB steps) | | | |
| Back-light compensation | On/Off | | | |
| Privacy Zone Masking | On/Off (24 positions) | | | |
| Flicker cancel | - | | | |
| Focusing system | Auto (Sensitivity: normal, low), One-push AF, Manual, Infinity, Interval AF, Zoom Trigger AF | | | |
| Picture effect | E-Flip, Neg. Art, Black & White, Mirror Image | | | |
| Camera operation switch | Zoom tele, Zoom wide | | | |
| Video output | VBS: 1.0 Vp-p (sync negative), Y/C Output | | | |
| Camera control interface | VISCA (TTL signal level), baud rate: 9.6 Kb/s, 19.2 Kb/s, 38.4 Kb/s, Stop bit: 1/2 selectable | | | |
| Storage temperature | -20 °C to 60 °C (-4 °F to 140 °F) | | | |
| Operating temperature | 0 °C to 50 °C (32 °F to 122 °F) | | | |
| Power consumption | 6 V to 12 V DC, 1.6 W (motors inactive) 2.7 W (motors active) | | 6 V to 12 V DC, 1.6 W (motors inactive) 2.5 W (motors active) | |
| Mass | Approx. 230 g (8.1 oz) | | | |
| Dimensions (W x H x D) | 50 x 57.5 x 81.8 mm (2 x 2 3/8 x 3 1/4 inches) | | 52 x 57.5 x 88.5 mm (2 1/8 x 2 3/8 x 3 1/2 inches) | |
| | | | 50 x 57.5 x 88.5 mm (2 x 2 3/8 x 3 1/2 inches) | |

SPECIFICATIONS comparison chart

| | FCB-EX780B/EX780BP | FCB-EX78B/EX78BP | FCB-EX480B/EX480BP | FCB-EX48B/EX48BP |
|------------------------|---|------------------|---|------------------|
| Lens | 25x | | 18x | |
| Image stabilizer | Yes | | No | |
| CCD | Super HAD CCD | | EXview HAD CCD | |
| Sensitivity | 2.5 lx | | 0.7 lx | |
| ICR | Yes | No | Yes | No |
| Dimensions (W x H x D) | 50 x 57.5 x 81.8 mm (2 x 2 3/8 x 3 1/4 inches) | | 52 x 57.5 x 88.5 mm (2 1/8 x 2 3/8 x 3 1/2 inches) | |
| | | | 50 x 57.5 x 88.5 mm (2 x 2 3/8 x 3 1/2 inches) | |

* When used continuously for more than 24 hours, it is recommended to initialize the lens system every 24 hours to extend the life of the lens. The 'Initialize Lens' command takes a little less than 3 seconds to initialize the focus and zoom.

Sony contacts

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SONY

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SONY BUSINESS EUROPE

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