

SONY

COLOR CAMERA BLOCK FCB-HD Series

The built-in 30x optical zoom and back-illuminated CMOS sensor with 0.01 lx minimum illumination allow capturing of high-fidelity images even at night or in low-light environments, which is very useful for security applications.



Dimensions : 50.0(W) × 60.0(H) × 89.7(D) mm

FCB-EV Series High Sensitivity Model
Full HD (1080p/60)

FCB-EV7520A
Optical Zoom 30x

Exmor R

STARVIS

Back-illuminated CMOS sensor

1/2.8-type Exmor R™ CMOS image sensor provides full high-definition and high-quality images. Fine, high-quality images can be captured even at night or in dark places.

Compatibility with previous models

As a successor of FCB-EV7520, this camera has specifications and a mechanical design compatible with the original model. Therefore, current FCB-EV7520 users can use the camera as a replacement camera.

High-performance 30x lens

The camera is equipped with a bright lens with 30x optical zoom and F1.6 aperture.

Highly advanced ISP

Using the image signal processor (ISP), the following images can be obtained.

- Full HD 60 fps output image
- Low focal plane distortion image using the high-speed readout of imager

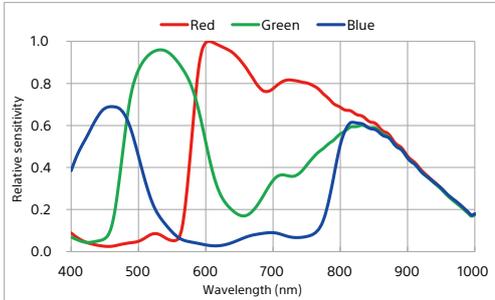
Feature

Exmor R back-illuminated CMOS sensor

The back-illuminated CMOS image sensor almost doubles sensitivity^{*1} and reduces noise compared to traditional front-illuminated CMOS image sensors. Light is received on the back side of the silicon board to effectively capture fine, high-quality images at night or in dark places, which could not be achieved by the image element structure of traditional front-illuminated sensors.

*1: Comparison of our back-illuminated CMOS image sensor and traditional (front-illuminated) sensors that have the same image element size (1.75 μm)

Spectral Sensitivity Characteristics



Use the graph as a reference value. (We can not guarantee these values.) This data is measured when the IR cut filter is removed and the characteristics of the lens and optical source characteristics are ignored.

Image output

HD:Digital (LVDS)

Wide Dynamic Range (Wide-D)

Wide Dynamic Range mode is a function for dividing an image into several blocks and correcting blocked-up shadows and blown-out highlights in accordance with the intensity difference. It enables you to obtain images in which portions ranging from dark to light can be recognized, even when capturing a subject with a large intensity difference that is backlit or includes extremely light portions.

OFF



ON



Visibility Enhancer (VE)

Depending on the imaging scene, the Visibility Enhancer function makes the darker part of a camera image brighter, and automatically corrects brightness and contrast to show bright parts clearly.

Defog (low/mid/high)

When the surrounding area of the subject is foggy and low contrast, the defog mode will reduce the effects of the fog and make the subject appear clearer. You can select from four levels: OFF, Low, Middle and High. The effect level can be automatically adjusted according to the fog density.

OFF



ON



* image

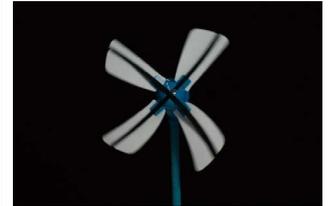
* image

Low Focal Plane Distortion Image

The FCB-EV7520A captures a high-speed moving image with distortion reduction.

Conventional Model
(With CMOS sensor)

FCB-EV7520A



Noise Reduction (NR)

The NR function removes noise (both random and nonrandom) to provide clearer images.

Privacy Zone masking

Privacy Zone masking protects private objects and areas such as house windows, entrances, and exits which are within the camera's range of vision but not subject to surveillance. Privacy zone masking can be masked on the monitor to protect privacy.

- Mask can be displayed on 8 places per screen
- Individual on/off zone masking settings.

Image Stabilizer

Switching On the Image Stabilizer function reduces image blurring caused by, for example, vibration, which allows you to obtain images without much blurring. A correction effect is possible for a vibration frequency of around 10 Hz.

StableZoom™

"StableZoom" is a function for performing correction using the Image Stabilizer function in accordance with the zoom ratio, and smoothly zooming up to approximately 36x using a combination of the optical zoom and digital zoom.

Picture Effect

- E-FLIP

This function reverses the video output from the camera vertically and horizontally.

- Freeze

This function captures an image in the field memory of the camera so that this image can be output continuously.

- Black & White (Monochrome Image)

Auto ICR

Auto ICR Mode automatically switches the settings needed for attaching or removing the IR Cut Filter. 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 IR Cut Filter is automatically enabled (ICR Off).

Specifications

FCB-EV7520A	
Basic Specifications	
Image Sensor (Number of effective pixels)	1/2.8-type Exmor R CMOS Sensor (2130K pixels)
Output Pixels (H x V)	1920x1080, 1280x720
Signal System	1080p/60, 1080p/59.94, 1080p/50, 1080p/30, 1080p/29.97, 1080p/25, 1080i/60, 1080i/59.94, 1080i/50, 720p/60, 720p/59.94, 720p/50, 720p/30, 720p/29.97, 720p/25
Minimum Illumination (50%, High Sensitivity Mode ON)	ICR-Off mode : 0.01 lx (Shutter Speed : 1/30 s), 0.0013 lx (1/4 s or 1/3 s) ICR-On mode : 0.0015 lx (Shutter Speed : 1/30 s), 0.0008 lx (1/4 s or 1/3 s, 30%)
Minimum Illumination (50%, High Sensitivity Mode OFF)	ICR-Off mode : 0.1 lx (Shutter Speed : 1/30 s), 0.013 lx (1/4 s or 1/3 s) ICR-On mode : 0.006 lx (Shutter Speed : 1/30 s)
Recommended Illumination	100 lx to 100,000 lx
Gain	Auto / Manual (0 dB to 50.0 dB), 0 to 28 steps
Shutter Speed	1/1 to 1/10000 s, 22 steps
Sync System	Internal
Exposure Control	0 dB to ±10.5 dB, 15 steps
Backlight Compensation	Yes
Gamma	Standard / Straight gamma
Aperture Control	16 steps
White Balance	Auto, ATW, Indoor, Outdoor, One Push WB, Manual WB, Outdoor Auto, Sodium Vapor Lamp (Fix/Auto/Outdoor Auto)
AE (Auto Exposure Mode)	Full Auto, Manual, Priority mode (shutter/iris), EV compensation, Spot Exposure, Slow AE
Lens (wide to tele)	30x optical zoom f= 4.3 mm to 129 mm, F1.6 to F4.7
Zoom Mode	Standard Mode / Variable Mode / Direct Mode
Digital Zoom	12x (360x with optical zoom)
Zoom Movement Speed	
Optical wide to Optical tele	5.0 s (Focus Tracking ON) 2.5 s (Focus Tracking OFF)
Optical wide to Digital 12 x tele	7.0 s (29.97p/59.94p) 7.4 s (25p/50p)
Digital wide to Digital 12 x tele	2.1 s (29.97p/59.94p) 2.5 s (25p/50p)
Focusing System	Auto Focus (Normal AF, Interval AF, Zoom Trigger AF [Sensitivity: normal, low]), Manual (Standard, Variable, Direct), One Push Trigger, Near Limit, Full Scan One Push Trigger, IR Correction
Focus Movement time	∞ to Near: 1.1 s
Horizontal Viewing Angle	
Horizontal Viewing Angle (1080p/1080i) (wide end to tele end)	63.7° to 2.3°
Horizontal Viewing Angle (720p) (wide end to tele end)	63.7° to 2.3°
Minimum Object Distance (wide end to tele end)	10 mm to 1200 mm
Camera Features	
Auto ICR	Yes
Wide Dynamic Range (Wide-D) (Auto mode)	Yes ^{*1}
Visibility Enhancer	Yes
Defog	Yes (low/mid/high)
Noise Reduction	Yes (3D+2D / Independent setting (3D, 2D))
Image Stabilization	Yes
StableZoom ^{*2}	Yes
Digital Output	Yes
Motion Detection	Yes
Spherical Privacy Zone Masking	Yes
Alarm	Yes
Slow AE Response	Yes
Picture Effects	Black & White (Monochrome Image)
Picture Freeze	Yes
Electronic-Flip (E-FLIP)	Yes
Mirror image	Yes
Slow Shutter	Yes
Temperature Readout	Yes
Title Display	Yes (20 characters / line, max. 11 lines)
Camera Mode Display	Yes (English)
Interface	
Video Output (HD)	Digital : Y / Pb / Pr 4:2:2 (LVDS) (Y: 8 bit, C: 8 bit, Vsync, Hsync, Field, Clock) (SMPT E274M/SMPT E296M)
Camera Control Interface	VISCA protocol (CMOS 5V Level) Baud Rate : 9.6 kbps, 19.2 kbps, 38.4 kbps, 115.2 kbps, Stop bit : 1 bit
General	
Power Requirements	6.0 V to 12.0 V DC
Power Consumption	3.2 W (When the motor operates: 4.0 W)
Operating Temperature	-5 °C to +60 °C (23 °F to +140 °F)
Storage Temperature	-20 °C to +60 °C (-4 °F to +140 °F)
Operating Humidity	20% to 80% (Absolute humidity : 36 g/m ³)
Storage Humidity	20% to 95% (Absolute humidity : 36 g/m ³)
Dimensions (W x H x D)	50.0 x 60.0 x 89.7 mm (2 x 2 3/8 x 3 5/8 in.)
Mass	Approx. 250 g (8.8 oz.)

*1 Wide-D (Wide dynamic range): When Wide-D is activated, it automatically switch to Auto mode.

*2 StableZoom increases the magnification by combining optical zoom and digital zoom.

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