

FCB-HD Series

FCB-EV7520A

NEW



STARVIS

Exmor R

Outline

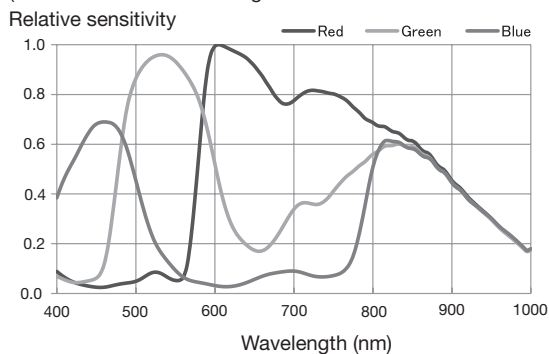
The built-in 30x optical zoom and back-illuminated CMOS sensor with 0.01 lx minimum illumination allow capturing of high-fidelity images even at night or in low-light environments, which is very useful for security applications.

Features

Exmor 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
(Lens characteristics and light source characteristics excluded.)



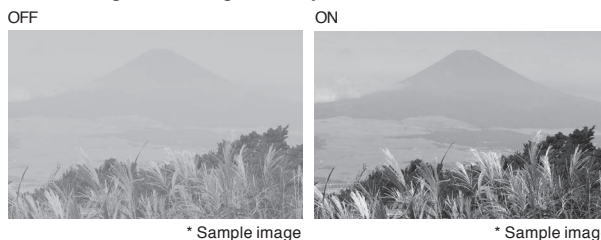
- High-performance 30x lens**
The camera is equipped with a bright lens with 30x optical zoom and F1.6 aperture.
- Compatibility with previous models**
As a successor of FCB-EV7520, this camera has specifications and a mechanical design compatible with the original model. Therefore, current FCB-EV7520 users can use the camera as a replacement camera.
- 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
- 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.

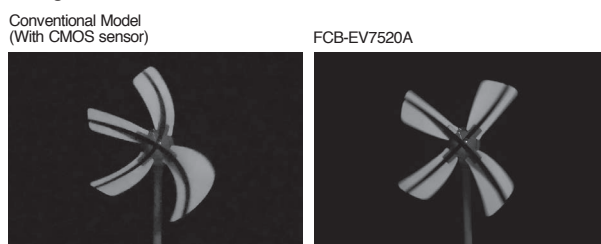


Visibility Enhancer (VE)
Depending on the imaging scene, the Visibility Enhancer function makes the darker part of a camera image brighter, and automatically correct brightness and contrast to show bright parts clearly.

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.



Low Focal Plane Distortion Image
The FCB-EV7520A captures a high-speed moving image with distortion reduction.



- **Noise Reduction (ND)**
The Noise Reduction removes noise (both random and non-random) 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).
- **AE (Auto Exposure Mode)**
A variety of AE functions are available for optimal output of subjects in lighting conditions that range from low to high.
 - **Full Auto**
Iris, Gain and Shutter Speed can be set automatically.
 - **Shutter Priority**
Adjust with Variable Shutter Speed, Auto Iris and Gain.
 - **Iris Priority**
Adjust with Variable Iris, Auto Gain and Shutter speed.
 - **Manual**
Adjust with Variable Shutter, Iris and Gain.
 - **Slow AE Response**
The slow AE Response function allows you to reduce the exposure response speed. Usually the camera is set up so that the optimum exposure can be obtained automatically within about 1 second.
 - **Spot AE**
In Spot AE, a particular section of the subject can be designated, and then that portion of the image can be weighted and a value computed so that Iris and Gain can be optimized to obtain an image.
- **White Balance**
Various modes
 - **Auto**
This mode computes the white balance value output using color information from the entire screen.
 - **ATW**
Auto Tracing White balance
 - **Indoor**
 - **Outdoor**
 - **Outdoor Auto**
This is an auto white balance mode specifically for outdoors.
 - **One Push WB**
The One Push White Balance mode is a fixed white balance mode that may be automatically readjusted only at the request of the user (One Push Trigger), assuming that a white subject, in correct lighting conditions, and occupying more than 1/2 of the image, is submitted to the camera.
 - **Manual WB**
 - **Sodium Vapor Lamp Auto**
 - **Sodium Vapor Lamp (Fix)**
 - **Sodium Vapor Lamp Outdoor Auto**
- **Focus**
 - **Auto Focus Mode**
The Auto Focus (AF) function automatically adjusts the focus position to maximize the high frequency content of the picture in a center measurement area, taking into consideration the high luminance and strong contrast components.
 - **Manual Focus Mode**
Manual Focus has both a Standard Mode and a Variable Mode. Standard Mode focuses at a fixed rate of speed. Variable Mode has eight speed levels.
 - **One Push Trigger Mode**
When a Trigger Command is sent, the lens moves to adjust the focus for the subject.
 - **Near Limit**
Can be set in a range from 1000 (∞) to F000 (10 mm). (Initial value: D000h (30 cm))
- **Temperature Readout**
The camera unit's internal temperature can be read from temperature sensor in stabled in the circuit board. Use it as a reference value.
- **Custom Preset**
The camera shooting conditions can be stored and recalled. The settings are recalled when the power is turned on.
* For the setting values, refer to the technical manual.
- **Memory (Position preset)**
Using the position preset function, 16 sets of camera shooting conditions can be stored and recalled. This function allows you to achieve the desired status instantly, even without adjusting the various items each time.
* For the setting values, refer to the technical manual.
- **Title Display**
You can set a title of up to 11 lines. One line can contain up to 20 characters.
You can set display on/off, the horizontal position of the first character, blinking state and color for each line.
- **Motion Detection (MD)**
This function instructs the camera to detect movement within the monitoring area and then send an alarm signal automatically.
 - You can set a frame for the detection range of 17 (horizontally) × 15 (vertically) blocks.
 - You can set the frame by assigning the starting point and terminating point vertically and horizontally.
 - You can set up to four frames.
When the motion is detected in the set frame, the Alarm Replay VISCA Command is sent.

VISCA/RS-232C

■ Overview of VISCA

In VISCA, up to seven peripheral devices like the FCB camera can be connected to one controller using communication conforming to the RS-232C standard.

Exmor R

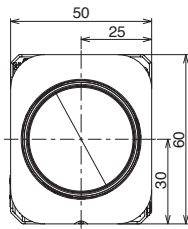
The Exmor R is a Sony's CMOS image sensor with significantly enhanced imaging characteristics including sensitivity and low noise by changing fundamental structure of Exmor pixel adopted column parallel A-D converter to back-illuminated type.

STARVIS

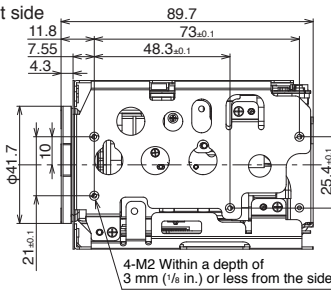
The STARVIS is back-illuminated pixel technology used in CMOS image sensors for surveillance camera applications. It features a sensitivity of 2000 mV or more per 1 μm^2 (color product, when imaging with a 706 cd/m² light source, F5.6 in 1 s accumulation equivalent), and realizes high picture quality in the visible-light and near infrared light regions.

Dimensions

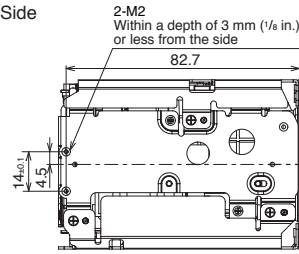
Front



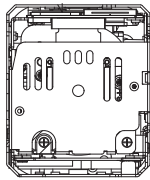
Right side



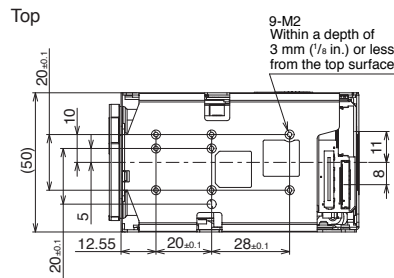
Left Side



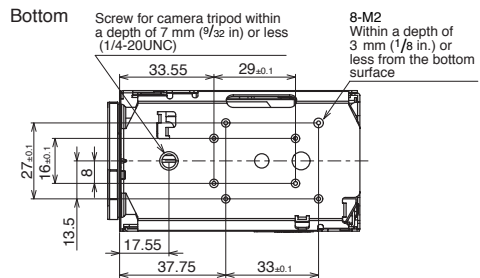
Rear



Top



Bottom



Unit: mm (inches)

Specifications

FCB-EV7520A	
Camera	
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 s to 1/10,000 s, 22 steps
Sync system	Internal
Exposure compensation	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)	30 x optical zoom f= 4.3 mm to 129 mm, F1.6 to F4.7
Zoom mode	SStandard Mode / Variable Mode / Direct Mode
Digital Zoom	12x (max. 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 12x tele	7.0 s (29.97p/59.94p), 7.4 s (25p/50p)
Digital wide to Digital 12x 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 (1080p/1080i mode) (wide) to (tele)	63.7° to 2.3°
Horizontal Viewing Angle (720p mode) (wide) to (tele)	63.7° to 2.3°
Minimum Object Distance (wide end to tele end)	10 mm to 1200 mm
Camera Features	
Auto ICR	Yes
Wide Dinamic Range (Wide-D)	Yes
(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) (SMPTE274M/SMPTE296M)
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 inches)
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.