

# FHD & 4K Functional Camera Blocks

SONY

Model Name	FCB-EV7520A	FCB-ER8300/J*1	FCB-ER8530/J	FCB-ER8550/J	FCB-ES8230
Image Sensor	1/2.8 type Exmor R CMOS	1/2.3 type Exmor R CMOS	1/2.5 type Exmor R CMOS		1.0 type Exmor R CMOS
Effective Pixels(H) x (V)	2.1MP	8.9MP	8.51MP		8.51MP
Output Pixels (H) x (V)	1920x1080(FHD), 1280x720(HD)		3840x2160(QFHD); 1920x1080(FHD); 1280x720(HD); 720x480(SD)		
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	2160p/29.97, 2160p/25, 1080p/59.94, 1080p/50, 1080i/59.94, 1080i/50, 720p/59.94, 720p/50	2160p/29.97, 2160p/25, 2160p/23.98, 1080p/59.94, 1080p/50, 1080p/29.97, 1080p/25, 1080p/23.98, 1080i/59.94, 1080i/50, 720p/59.94, 720p/50, 480p/59.94, 576p/50		
Min. Illumination 50%, High Sensitivity Mode ON (Shutter Speed)	0.0015lx (1/30 s) 0.0008lx (1/4 s or 1/3 s)	0.75lx (1/30 s) 0.1lx (1/4 s or 1/3 s)	0.4lx (1/30 s) 0.06lx (1/4 s or 1/3 s)		0.5lx (1/30 s) 0.067lx (1/4 s or 1/3 s)
Lens (wide to tele)	30x optical zoom f= 4.3 mm to 129 mm F1.6 to F4.7	12x optical zoom f= 3.9 mm to 46.8 mm F1.8 to F2.0	20x optical zoom f = 4.4 mm to 88.4 mm F2.0 to F3.8		12x optical zoom f= 9.3 mm to 111.6 mm F2.8 to F4.5
Super Resolution Zoom	n/a	QFHD: max. 20x Full HD/HD: max. 24x	QFHD: max. 30x Full HD/HD: max. 40x		QFHD: max. 18x Full HD/HD: max. 24x
Digital Zoom	12x (360x with optical zoom)	12x (144x with optical zoom)	12x (240x with optical zoom)		12x (144x with optical zoom)
Horizontal Field of View (Image Stabilizer)	Approx. 63.7° to 2.3°	Approx. 70.7° to 6.2°	Approx. 70.2° to 4.1° (OFF) Approx. 60.0° to 3.5° (ON)		Approx. 64.6° to 6.1° (OFF) Approx. 64.5° to 6.1° (ON)
Sync System	Internal	Internal	Internal	Internal/External	Internal
Wide Dynamic Range	Yes (DOL)	VE			
Image Stabilization	Yes (EIS)	No	Yes (EIS)		Yes (Optical)
Noise Reduction	Yes (2D/3D)				
Video Output	Digital : Y / Pb / Pr 4:2:2 (LVDS) (Y: 8 bits, C: 8 bits, Vsync, Hsync, Field, Clock) (SMPTE274M/SMPTE296M)	Digital: Y/Cb/Cr 4:2:2 8 bits component, R/G/B 4:4:4 8 bits component, Comparable to CEA-861-F			
Camera Interface	VISCA protocol (CMOS 5V Level) Baud Rate: 9.6 kbps, 19.2 kbps, 38.4 kbps, 115.2 kbps, Stop bit : 1 bit	VISCA protocol (CMOS 3.1V) Baud Rate: 9.6 kbps, 19.2 kbps, 38.4 kbps, 115.2 kbps, Stop bit : 1 bit			
Power Requirement	6.0 V to 12.0 V DC				
Power Consumption	3.2 W (When motor operates: 4.0 W)	2.9 W (When motor operates: 3.7 W)	3.0 W (When motor operates: 4.0 W)		4.0 W (When motor operates: 5.2 W)
Operating Temp.	-5 °C to +60 °C (+23 °F to +140 °F)				
Storage Temp.	-20 °C to +60 °C (-4 °F to +140 °F)				
Operating Humidity	20% to 80% (Absolute humidity: 36 g/m <sup>3</sup> )				
Storage Humidity	20% to 95% (Absolute humidity: 36 g/m <sup>3</sup> )				
Dimensions (W x H x D)	50.0 × 60.0 × 89.7 mm (2 × 2 3/8 × 3 5/8 in.)	60.0 × 64 × 105 mm (2 3/8 × 2 5/8 × 4 1/4 in.)	50.0 × 60.0 × 93.3 mm (2 × 2 3/8 × 3 3/4 in.)		65.1 × 70.0 × 134.8 mm (2 5/8 × 2 7/8 × 5 3/8 in.)
Mass	Approx. 250 g (8.8 oz.)	Approx. 385 g (14 oz.)	Approx. 275 g (10 oz.)		Approx. 520 g (18.3 oz.)

(\*1) - When the model name includes "/" (slash J) read the model name as "FCB-ER8300" (China built model) and "FCB-ER8300/J" (Japan built model)

Model Name	XCU-CG160/C	XCG-CG160/C	XCG-CG240/C	XCG-CG510/C	XCG-CG510CP	XCL-CG510/C	XCL-SG510/C	XCL-SG1240/C
Image Sensor	1/2.9 type GS CMOS	1/2.9 type GS CMOS	1/1.2 type GS CMOS	2/3 type GS CMOS	2/3 type GS CMOS	2/3 type GS CMOS	2/3 type GS CMOS	1.1 type GS CMOS
Effective Pixels(H) x (V)	1.6MP	1.6MP	2.4MP	5.1MP	5.1MP	5.1MP	5.1MP	12.4MP
Cell Size (H) x (V)	3.45 μm × 3.45 μm		5.86 μm × 5.86 μm	3.45 μm × 3.45 μm				
Color Filter (color only)	RGB color mosaic filter				--	RGB color mosaic filter		
Frame Rate	100 fps (8 bit, Mono/Raw)	75 fps (8 bit, Mono/Raw) 45 fps (10 bit, Mono/Raw)	41 fps (8 bit, Mono/Raw) 33 fps (10 bit, Mono/Raw)	23 fps (8 bit, Mono/Raw)	23 fps (8 bit, Mono/Raw)	14 fps (Base, 8 bit, 1 tap, Mono/Raw) 35 fps (Base, 8 bit, 3 tap, Mono/Raw)	14 fps (Base, 8 bit, 1tap, Mono/Raw) 35 fps (Base, 8 bit, 3tap, Mono/Raw)	6 fps (Base, 8 bit, 1 tap, Mono/Raw) 20 fps (Base, 8 bit, 3 tap, Mono/Raw)
Minimum Illumination	BW 0.5 lx (Iris: F1.4, Gain: +18 dB, Shutter: 1/30 s) Color 12 lx (Iris: F1.4, Gain: +18 dB, Shutter: 1/30 s)		BW 0.5 lx (Iris: F1.4, Gain: +18 dB, Shutter: 1/30 s) Color 10 lx (Iris: F1.4, Gain: +18 dB, Shutter: 1/30 s)		BW 1.5 lx (Iris: F1.4, Gain: +18 dB, Shutter: 1/23 s)		BW: 0.5 lx (Iris: F1.4, Gain: +18 dB, Shutter: 1/30 s) Color: 12 lx (Iris: F1.4, Gain: +18 dB, Shutter: 1/30 s)	
Readout Modes	BW Normal, Binning (1x2, 2x1, 2x2), Partial scan (Multi ROI) Color Normal, Partial scan (Multi ROI)		Normal, Partial scan			BW Normal, Binning (1x2, 2x1, 2x2), Partial scan Color Normal, Partial scan	BW Normal, Binning (1x2, 2x1, 2x2), Partial scan (Multi ROI) Color Normal, Partial scan (Multi ROI)	BW Normal, Binning (1x2, 2x1, 2x2), Partial scan Color Normal, Partial scan
Trigger Modes	OFF (Free run), ON (Edge detection, Trigger width detection), Burst	OFF (Free run), ON (Edge detection, Trigger width detection), Special trigger (Burst, Bulk, Sequential, Free set sequence)			Edge detection, Pulse width detection, Bulk, Sequential	OFF (Free run), ON (Edge detection, Trigger width detection), Special trigger (Burst/Bulk/Sequential)		OFF (Free run), ON (Edge detection, Trigger width detection), Burst
Features	LUT (Binarization, Gamma (Arbitrary value settable)), Test pattern				LUT (Binarization, Gamma (Arbitrary value settable)), Test pattern			
Video Data Output	BW digital Mono 8, 12 bit Color digital Raw 8, 12 bit RGB, YCbCr422, YCrCb444	BW digital Mono 8, 10, 12 bit Color digital Raw 8, 10, 12 bit RGB, YUV422, YUV444	BW digital Mono 8, 10, 12 bit Color digital Raw 8, 10, 12 bit RGB, YUV422, YUV444	BW digital Mono 8, 10, 12 bit Color digital Raw 8, 10, 12 bit RGB, YUV422, YUV444	Mono 8, 10, 12-bit	BW digital Mono 8, 10, 12 bit Color digital Raw 8, 10, 12 bit Digital RGB 24 bit	BW digital Mono 8, 10, 12, 16 bit Color digital Raw 8, 10, 12, 16 bit	BW digital Mono 8, 10, 12 bit Color digital Raw 8, 10, 12 bit
Digital Interface	USB3 Vision	Gigabit Ethernet (1000BASE-T/100BASE-TX) GigE Vision® Version 2.0/1.2				Camera Link® Version2.0		
Lens Mount	C mount							
Flange Back	17.526 mm							
Power Requirement	DC +12 V (10.5 V to 15.0 V), USB bus (DC +5V ± 5%)	DC +12 V (10.5 V to 15.0 V), IEEE802.3af (37 V to 57 V)				DC +12 V (10.5 V to 15.0 V), PoCL (10 V to 13.0 V)		
Power Consumption	DC +12 V 3.5W USB bus power 3.0W	DC+12V 3.3 W (max.) IEEE802.3af 4.0 W (max.)	DC+12V 3.0 W (max.) IEEE802.3af 3.6 W (max.)	DC+12V 3.0 W (max.) IEEE802.3af 3.7 W (max.)		2.7 W max. (DC +12V)	5.0 W max. (DC +12V)*3	3.8 W max. (DC +12V)
Operating Temp.	-5°C to +45°C (23°F to 113°F)							
Storage Temp.	-30°C to +60°C (-22°F to +140°F)							
Operating Humidity	20% to 80% (no condensation)							
Storage Humidity	20% to 95% (no condensation)							
Dimensions (W x H x D) (excluding protrusions)	29 × 29 × 30 mm 1 3/16 × 1 3/16 × 1 3/16 in		29 × 29 × 42 mm 1 3/16 × 1 3/16 × 1 11/16 in			29 × 29 × 30 mm 1 3/16 × 1 3/16 × 1 3/16 in		44 × 44 × 30 mm 1 3/4 × 1 3/4 × 1 3/16 in
Mass	Approx. 50 g (Approx. 1.8 oz)		Approx. 65 g (Approx. 2.3 oz)			Approx. 53 g (Approx. 1.9 oz)		Approx. 96 g (Approx. 3.4 oz)
MTBF	67,447 hours (Approx. 7.7 years)	58,525 hours (Approx. 6.7 years)	63,172 hours (Approx. 7.2 years)	62,042 hours (Approx. 7.1 years)		81,562 hours (Approx. 9.3 years)	70,523 hours (Approx. 8.1 years)	64,461 hours (Approx. 7.4 years)