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Harshcam

Colour Ruggedized Block Camera

www.harshcam.com

Recently, Iberoptics has developed an improvement of Sony block camera model FCB-EV7520A that consists in fixing zoom and focus position, in order not to have losses in focus and zoom adjustment during impacts.
This ruggedized camera warranties to resist impacts up to 40 G for more than 11 miliseconds.

Harshcam

Ruggedized camera based on the Sony block FCB-EV7520A camera

- 1/2.8-type CMOS
- Full HD Model (1080/60)
- 30x Optical Zoom (with Digital Zoom 360x)
- **Ruggedized zoom and focus. Tested up to 40G**

Features

FHD 1/2.8-type CMOS

- Superb Full HD (1920 x 1080) picture quality
- Improved WDR specifications with DOL Method:
  1080p/60 mode - 90 dB
  1080p/30 mode - 130 dB

30x Optical Zoom lens

Excellent zooming performance & dura

Digital Zoom

- 12X Digital Zoom
- Provides 360x zoom at FHD resolution without compromise

Form factor compatible with FCB-EV series

Direct Successor to FCB-EV7520 with same size & dimensions for easy migration

Other Features

- Defog (Auto, low/mid-high)
- Auto ICR
- Noise Reduction
- Slow AE Response
- Private Zone Masking
- Visibility enhancer
- Flicker compensation
- High Sensitivity

Key applications

Key applications of the HarshCam include integration in vehicles or systems in harsh working environments, where vibrations, shocks, or impacts belong to the daily business.

Typical examples:

All-terrain vehicles for rescue and disaster relief

Defense and security

Sports

Drones and helicopters

Construction

Whenever an imaging system in a critical environment or application suffers from disconnections or random resets due to mechanical reasons the HarshCam is the primary solution to consider.

In this video you can check the performance of the HarhsCam

https://youtu.be/Uipe8GABdbA

Configuration and connectivity of the HarshCam models

The modifications made on the Sony blocks to achieve the HarshCam are internal and completely transparent for the integrator and the user.
The connectivity and the control software are therefore the same than those of the original Sony block.

Similarly, the external footprint and dimensions of the Sony block are not affected by the modifications and improvements of the HarshCam.

Thanks to this a HarshCam can replace a standard Sony block of the same base model without further workarounds: simply exchange one unit for the other and power on.

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.

We make it easy to understand the original block behind each HarshCam model:

HarshCam model	Sony block	Imager type
HarshCam-7520	FCB-EV7520A	Full-HD
HarshCam-8550	FCB-ER8550	4K
HarshCam-8530	FCB-ER8530	4K

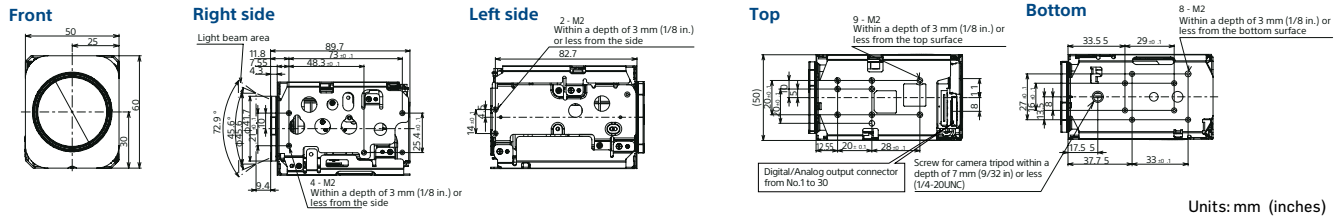
This comparison shows the response of the HarshCam (on the left) and any other machine vision camera (in this case the Sony FCB-7520A, on the right) after a 40G impact.

https://youtu.be/Uipe8GABdbA

Best case for the other camera

Typical case for the other camera

Dimensions



Units: mm (inches)

Harshcam Specifications

Camera		Harshcam-7520	Harshcam-8550	Harshcam-8530
Image Sensor		1/2.8-type CMOS	1/2.5-type Exmor R CMOS Sensor	
ICR function		Yes		
Picture freeze		Yes		
Auto Slow Shutter		Yes		
Slow Shutter function		Yes		
Wide Dynamic Range		O (DOL method, (90dB 1080p60, 130dB 1080p30)	–	–
Signal system HD		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	–	–
Picture elements		Approx. 2.13Mpixels	8.51M pixels	
Horizontal resolution		TBC	–	–
Lens		x30 Zoom	20x optical zoom,	
		f = 4.3 (WIDE) to 129.0 (TELE) mm - (F1.6 to F4.7)	f = 4.4 mm to 88.4 mm, F2.0 to F3.8	
Zoom movement speed	Optical WIDE/Optical TELE	2.5 sec (Focus Tracking OFF), 5.0 sec (Focus Tracking ON)	3.0 s (Focus Tracking ON)	
	Optical WIDE/Digital TELE	7.0 sec (29.97Hz/59.94Hz mode), 7.4 sec (25p/50p mode)	5.0 s	
	Digital WIDE/Digital TELE	2.1 sec (29.97Hz/59.94Hz mode), 2.5 sec (25p/50p mode)	–	–
	Infinit to near:	1.1s	0.1 s	
Digital zoom		x12 (x360 with optical zoom)	12x (240x with optical zoom)	
Angle of view (H)		Approx. 63.7 degree (WIDE end), Approx. 2.3 degree (TELE end)	Approx. 60.0° to 3.5° (Image stabilizer ON) (WIDE end to TELE end)	
Minimum object distance		10 mm (WIDE end), 1200 mm (TELE end)	80 mm (WIDE end) to 800 mm (TELE end)	
Image stabilizer		Yes		
Sync System		TBC	Internal / External	Internal
Recommended illumination		100 to 100000 lux	–	–
illumination		0.1 lux (50IRE, 1/30s, ICR off, Slow Shutter off, High Sensitivity off), 01 lux (50IRE, 1/30s, ICR off, Slow Shutter off, High Sensitivity on)	–	–
		0.013 lux (50IRE, ICR off, Slow Shutter 1/4s, High sensitivity off), 0.0013 lux (50IRE, ICR off, Slow shutter 1/4s, High sensitivity on)	–	–
		0.006 lux (50IRE, ICR on, Slow Shutter off, High Sensitivity off), 0.0015 lux (50IRE, ICR on, Slow Shutter off, High Sensitivity on)	–	–
		0.0008 lux (30IRE, ICR on, Slow shutter 1/4s, High sensitivity on)	–	–
Electronic shutter speed		1/1 to 1/10000 sec. (22 steps)	–	–
White balance		Auto, ATW, Indoor, Outdoor, Outdoor Auto, Sodium Vapor Lamp Fix/Auto/outdoor , One-push, Manual	Auto, ATW, Indoor, Outdoor, Outdoor Auto, Sodium Vapor Lamp (Fix/Auto/ Outdoor Auto),One Push WB, Manual WB,	
Gain		Auto/Manual/Max gain limit/High Sensitivity (0 to 50.0 dB, 28 steps)	Auto / Manual (0 dB to 48.0 dB), 0 to 16 steps	
AE control		Full Auto, Shutter Priority, Iris Priority, Manual, Exposure Compensation, Slow AE, Back Light Compensation, Slow Shutter - Auto/Manual, Min shutter limit	Full Auto, Manual, Priority mode (shutter/iris), Bright, EV Compensation	
EV compensation		-10.5 to +10.5 dB (1.5 dB steps)	–	–
Flicker compensation		Yes (flicker reduction ON/OFF)	–	–
Noise reduction		Yes 6 steps (2DNR 3DNR separate mode)	Yes (3D+2D / Independent setting (3D, 2D))	
Spot AE		Yes		
Focusing system		Auto (Sensitivity: normal, low), One-push AF, Manual, Infinity, Interval AF, Zoom Trigger AF, Near Limit, Focus Compensation with IR lighting	Auto Focus (Normal AF, Interval AF, Zoom Trigger AF [Sensitivity : normal, low]), Manual (Standard, Variable, Direct), One Push Trigger, Near Limit, Spot Focus, IR Correction	
Picture effects		Defog (Auto, 3 levels), Visibility enhancer, Black & White, E-Flip, Mirror, Black level, gamma, Sat/Hue Adjust, HLC, contrast	Black & White (Monochrome Image)	
Character generator		Yes (11 lines x 20 characters)	–	–
Grid /cross display		Yes (center line)		
Privacy zone masking		Yes (with Spherical Pan/tilt)	Spherical Privacy Zone Masking	
		(24 mask, 8 on screen, 160x90 matrix)	–	–
Interlock with pan, tilt and zoom		Yes (spherical interlocking)	–	–
Alarm function		Yes (motion detection with 4 zones)	Yes (Auto ICR)	
Camera operation switch		TBC	–	
Aperture control		Yes (16 steps)		
Preset		16 positions, 1 custom/power on preset	–	–
User memory		16 bytes	–	–
Serial interface		VISCA protocol (TTL/CMOS), 9.6 Kbps, 19.2 Kbps, 38.4 Kbps, 115.2 Kbps, Stop bit 1/2 bit	VISCA protocol (CMOS 3.1V) PTP USB 9.6 kbps, 19.2 kbps, 38.4 kbps, 115.2 kbps, Stop bit:1 bit	
Remote update		Yes (Serial 115200 bds)	–	–
External Key switch		TBC	–	
AF LED		TBC	–	–
Visca Model ID		0640	–	
Video output		HD: Digital (Y/Cb/Cr 4:2:2) Dual/single LVDS	Digital Y/Cb/Cr 4:2:2 8 bits component, R/G/B 4:4:4 8bits component, similar to CEA-861-F HDMI1.4b*2	
Connector		30 pin LVDS	–	–
Battery backup		TBC	–	–
Metal frame		Yes	–	–
Lens Mount adaptor		TBC	–	–
lens diameter		41.7mm	–	–
Supplied accessories		TBC	–	–
Storage temperature/ Humidity		-20 to +60 °C/20 to +95 %		
Operating temperature/ Humidity		-5° to 60°/20% to 80%		
Power Consumption		Approx. 4.0W	3.0 W (When the motor operates:4.0 W)	
Power voltage		6 to 12 V DC		
Weight		Approx. 250g	Approx. 275 g	
Dimensions		Approx. 50.0 x 60.0 x 89.7mm	50.0 × 60.0 × 93.3 mm	

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