

FASTCAM SA-X

FASTCAM SA-X:

High-Speed Video System

Next generation CMOS sensor technology

Providing 10,000fps, 1024 x 1024 pixels



The Photron FASTCAM SA-X will meet the requirements of the most demanding applications in research and development due to its unrivaled sensitivity, frame rate and resolution.

This high specification will permit the SA-X to be applied to areas of research once dismissed as unsuitable for digital high-speed video.

Building on the success of the SA 5 range of systems our sensor design improves sensitivity, image quality and color reproduction.

The Fastcam SA-X delivers mega-pixel resolution at 10,000fps, an impressive maximum frame rate of 324,000fps and a 0.293 microsecond exposure time.

Target applications include:

- Materials research
- Combustion
- Inkjet
- Cavitation
- Aerospace
- Fluid dynamics
- PIV

FEATURES

- ❑ Performance examples:
 - 1024 X 1024 pixels @ 10,000fps
 - 512 x 512 pixels @ 30,000fps
 - 256 x 256 pixels @ 72,000fps
 - 256 x 128 pixels @ 120,000fps
- Up to 324,000 fps at reduced resolution
- ❑ Variable Region of Interest (ROI)
- ❑ Capture 12-bit uncompressed data
- ❑ 20 μ m pixels ensure best light sensitivity for demanding high-speed or low light applications
- ❑ 0.293 μ s global shutter can be set independent of selected frame rate.
- ❑ Composite and SDI video output for real time monitoring during set up, recording and playback
- ❑ Optional remote keypad control
- ❑ 8GB, 16GB or 32GB memory options
- ❑ Gigabit Ethernet interface

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Frame rate / resolution table:

Variable frame rate steps 128 x 8
Some options omitted for clarity

Horizontal resolution

Vertical resolution

V \ H	1024	896	768	640	512	384	256	128	64	32	16	8
1024	10,000	10,800	13,500	16,200	20,000	25,000	37,500	67,500	120,000	180,000	240,000	300,000
896	10,800	12,500	15,000	16,200	21,600	28,800	40,500	75,000	120,000	180,000	259,200	300,000
768	12,500	13,500	16,200	19,200	24,000	30,000	45,000	81,000	135,000	202,500	270,000	300,000
640	13,500	15,000	18,000	21,600	25,000	32,400	50,000	86,400	144,000	202,500	270,000	324,000
512	15,000	16,200	20,000	24,000	30,000	37,500	54,000	96,000	150,000	225,000	288,000	324,000
384	16,200	20,000	22,500	27,000	32,400	43,200	60,000	108,000	162,000	240,000	300,000	324,000
256	20,000	22,500	27,000	32,000	37,500	50,000	72,000	120,000	180,000	240,000	300,000	324,000
128	24,000	27,000	32,400	37,500	45,000	60,000	81,000	135,000	202,500	270,000	324,000	324,000

- Sensor 12-bit CMOS (Bayer system color, single sensor) with 20µm pixel
- Shutter Global electronic shutter from 1ms to 0.293µs independent of frame rate
- Lens Mount Interchangeable F-mount and C-mount using supplied adapters
- Extended dynamic range Four presets prevent pixel over-exposure
- Memory 8GB (standard), 5457 frames (1024 x 1024 x 12-bits),
16GB (option), 10,913 frames (1024 x 1024 x 12 bits),
32GB (option), 21,841 frames (1024 x 1024 x 12 bits),
- Video Output # 1 NTSC/ PAL composite VBS (BNC). Ability to zoom, pan and tilt within image via keypad. Live video during recording.
- Video Output # 2 SDI:D1 digital component 1 channel (BNC) Industry standard digital output, 720 x 576 PAL, 720 x 480 NTSC
- Camera Control Through optional keypad and Gigabit Ethernet or RS-422A
- User preset switches 4 camera mounted user defined function buttons
- Triggering Selectable positive or negative TTL 5Vp-p or switch closure
- Trigger delay Programmable delay on selected input and output triggers, 200ns resolution
- Phase Lock Enables cameras to be synchronized precisely together to a master camera or external source
- Recording Modes Start, End, Center, Manual, Random, Random Reset
- Saved Image Formats JPEG, AVI, TIFF, BMP, RAW, PNG (12bit) and FTIF (8 bit). Images can be saved with or without image or comment data
- Data Display Frame Rate, Shutter Speed, Trigger Mode, Date or Time, Status (Playback/Record), Real Time, Frame Count and Resolution
- Partitioning Up to 64 memory segments for multiple recordings in memory
- Cooling Actively cooled
- Operating Temperature 0-40 degrees
- Mounting 1x ¼-20 UNC, 1x 3/8-16 UNC, 6x M6
- Dimensions and Weight 310mm L x 170mm W x 160mm H, weight 9.1kg
- Power requirements 100V - 240V , 50-60Hz 180VA

Specifications subject to change without notice.

PHOTRON LIMITED
Fujimi-Cho 1-1-8
Chiyoda-Ku
Tokyo 102-0071
Japan
tel +81 (0) 3 3238-2106
fax +81 (0) 3 3238 2109
email: image@photron.co.jp
www.photron.co.jp