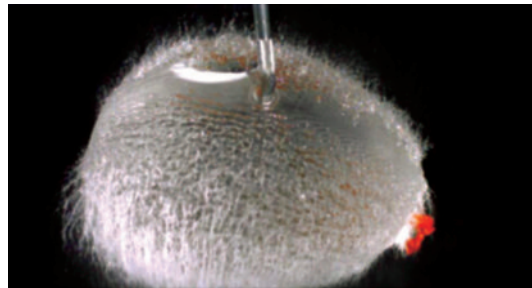
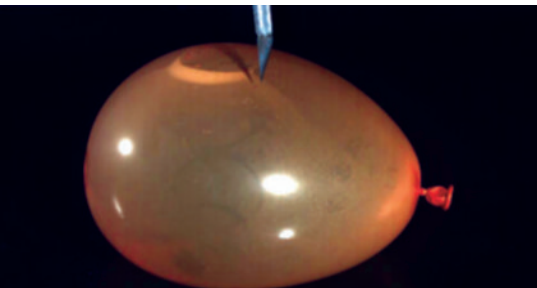
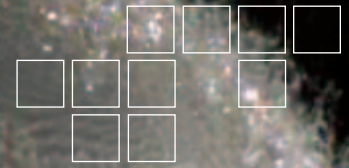


FASTCAM SA1.1

ULTRA HIGH-SPEED VIDEO SYSTEM



Next generation CMOS sensor technology providing 5,400 fps, 1024x1024 pixels

The Photron FASTCAM SA1 will meet the imaging requirements of the most demanding applications in research and development due to its unrivaled sensitivity, speed and resolution.

The FASTCAM SA1 uses the latest CMOS sensor to achieve sensitivity and speeds previously unattainable. With a top speed in excess of 600,000 fps (frames per second) and with true 12-bit dynamic range, the FASTCAM SA1 once again establishes Photron as the true leader of high speed imaging innovation.

With a global shutter operating independently of the frame rate selected; from 1/60th of a second to 1 μ s, and with the dead time between sequential frames less than a microsecond, the FASTCAM SA1 provides everything, yes, everything, even an SDI output as standard, that true high speed users demand.

For those not wanting to use a PC to control and operate the camera through the Gigabit Ethernet port, the FASTCAM SA1 can be controlled by an RS-422 remote control keypad with built-in 5" LCD monitor for complete camera set-up and operation.

For applications where ingress of dust or moisture would be hazardous, a sealed version (FASTCAM SA1 RV) is available.

Target applications include:

- Ballistics
- Materials research
- Defence
- Aerospace
- Fluid dynamics
- PIV

Benefits

Performance:

- 1,024 x 1,024 pixels @ 5,400 fps
- 832 x 608 pixels @ 10,800 fps
- 640 x 480 pixels @ 18,000 fps
- 512 x 512 pixels @ 20,000 fps
- 256 x 256 pixels @ 67,500 fps
- 256 x 16 pixels @ 500,000 fps
- 64 x 16 pixels @ 675,000 fps

Variable Region of Interest (ROI)

Capture 12-bit uncompressed data

One microsecond global shutter

Composite and SDI video output for real time monitoring during set up, recording and playback

Memory options include 8GB, 16GB, 32GB and 64GB

Phase lock to IRIG/GPS

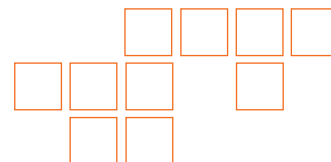


Photron

www.photron.com

FASTCAM SA1.1

HIGH SPEED VIDEO SYSTEM



Specifications: Frame Rate / Recording Duration Table

FRAME RATE (fps)	MAXIMUM RESOLUTION Horizontal Vertical		SHUTTER EXPOSURE TIME 1/Frame Rate to 1µs	RECORD DURATION (12-BIT)							
				TIME (Sec.)				FRAMES			
				8GB	16GB	32GB	64GB	8GB	16GB	32GB	64GB
1,000	1,024	1,024		5.46	10.92	21.84	43.68	5,457	10,918	21,841	43,686
2,000	1,024	1,024		2.73	5.46	10.92	21.84	5,457	10,918	21,841	43,686
3,000	1,024	1,024		1.82	3.64	7.28	14.56	5,457	10,918	21,841	43,686
5,000	1,024	1,024		1.09	2.18	4.37	8.73	5,457	10,918	21,841	43,686
5,400	1,024	1,024		1.01	2.02	4.04	8.09	5,457	10,918	21,841	43,686
10,000	768	768		0.97	1.94	3.88	7.76	9,701	19,410	38,829	77,665
15,000	768	512		0.97	1.94	3.88	7.76	14,552	29,116	58,243	116,497
20,000	512	512		1.09	2.18	4.37	8.73	21,829	43,674	87,365	174,746
30,000	512	352		1.06	2.12	4.24	8.47	31,751	63,526	127,076	254,176
75,000	512	128		1.16	2.33	4.66	9.31	87,317	174,698	349,461	698,986
100,000	320	128		1.40	2.80	5.59	11.18	139,707	279,517	559,138	1,118,378
125,000	256	128		1.40	2.80	5.59	11.18	174,634	349,397	698,922	1,397,973
180,000	128	128		1.94	3.88	7.77	15.53	349,269	698,794	1,397,845	2,795,946
250,000	128	80		2.24	4.47	8.95	17.89	558,830	1,118,071	2,236,552	4,473,514
300,000	128	64		2.33	4.66	9.32	18.63	698,538	1,397,589	2,795,690	5,591,893
500,000	64	32		5.59	5.59	22.37	44.73	2,794,154	2,795,178	11,182,762	22,367,573
675,000	64	16		8.28	16.56	33.13	66.27	5,588,309	11,180,714	22,365,525	44,735,146

Sensor	12-bit ADC (Bayer system color, single sensor) with 20µm pixel
Shutter	Global electronic shutter from 16.7ms to 1µs independent of frame rate is standard
Lens Mount	Interchangeable F-mount and C-mount using supplied adapters
Extended Dynamic Range	Selectable in twenty steps (0 to 95% in 5% increments) to prevent pixel over-exposure
Memory	8GB (standard), 5,457 frames, 1.01 sec @ 5400fps 16GB (option), 10,918 frames, 2.02 sec @5400fps 32GB (option), 21,841 frames, 4.04 sec @5400fps 64GB (option), 43,686 frames, 8.09 sec @5400fps
Video Output 1	NTSC/PAL composite VBS (BNC). Ability to zoom, pan and scroll within image via keypad. Live video during recording.
Video Output 2	SDI:D1 digital component 1 channel (BNC) industry standard digital output NTSC and PAL
Camera Control	Available Gigabit Ethernet and RS-422 keypad with built in 5" LCD viewfinder
User Preset Switches	Four user selectable camera function control mounted on the cameras rear panel
Low Light Mode	Low light mode drops the frame rate and shutter time to their maximum values, while maintaining other set parameters, to enable users to position and focus the camera
Triggering	Selectable positive or negative TTL 5Vp-p or switch closure
Trigger Delay	Programmable delay on selected input and output triggers, 100ns resolution
Timing	Internal clock or external source such as IRIG or GPS

Phase Lock	Enables cameras to be precisely synchronized together, or to an external source, such as IRIG or GPS time codes
Event Markers	Ten user –entered event markers mark specific events within the image sequence in real time. Immediately accessible through software
Dual Speed Recording™	Enables the recording speed to be changed up or down by a factor of 2, 4 or 8 during a recording
Recording Modes	Start, End, Center, Manual, Random, Random Reset, Random Center, Random Manual and Dual Speed Recording
Saved Image Formats	JPEG, AVI, TIFF, BMP, RAW, RAWW, PNG and FTIF. Images can be saved with or without timing and comment data
Data Display	Frame Rate, Shutter Speed, Trigger Mode, Date or Time (can be switched), Status (Playback/Record), Real Time, Frame Count and Resolution
Partitioning	Up to 64 memory segments for multiple recordings in memory
Data Acquisition	Supports Photron MCDL and DAQ
Cooling	Actively cooled
Operating Temp.	0-40 degrees C (Range version increases upper limit to 45C)
Mounting	1x ¼-20 UNC, 1x 3/8-16 UNC, 6x M6
Dimensions and Weight	160mm (6.30")H x 153mm (6.02")W x 242.5mm (9.55")D *excluding protrusions Weight 13 lbs (5.9 kg)
Power Requirements	100V - 240V AC ~ 1.5A, 50-60Hz optional DC operation 20 to 36V DC. AC adaptor provided

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