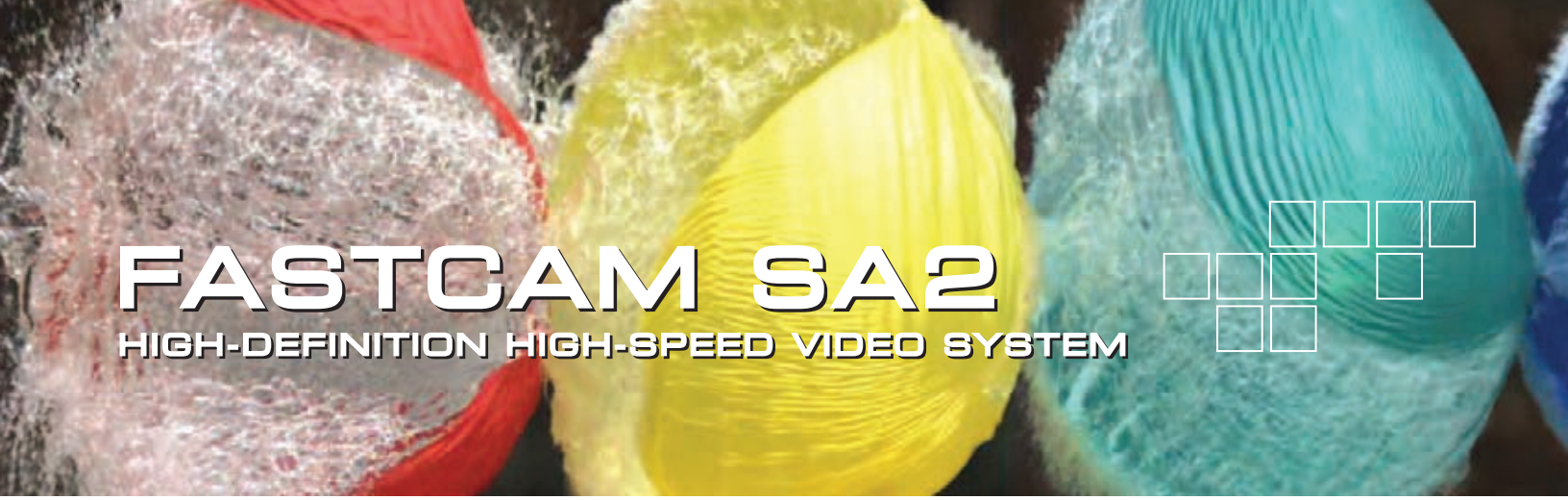
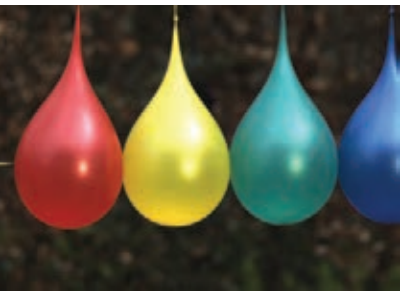
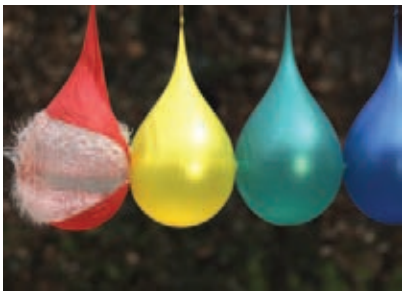
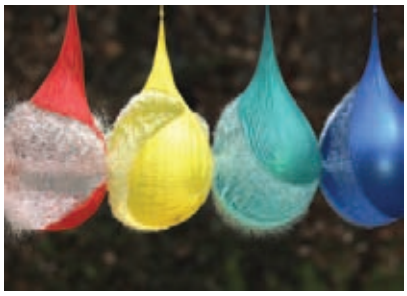


FASTCAM SA2

HIGH-DEFINITION HIGH-SPEED VIDEO SYSTEM


2,048 x 2,048 (4MEGA pixel) resolution, developed for a broad range of applications including automotive safety testing, defense, fluid dynamics and materials research

The FASTCAM SA2 has been engineered to provide the optimum speed and resolution required for detailed observation and analysis of high speed events occurring in large spatial areas or fields of view. The 10 μm pixels lend themselves perfectly to micro analysis applications such as Particle Image Velocimetry (PIV) or Digital Image Correlation (DIC).

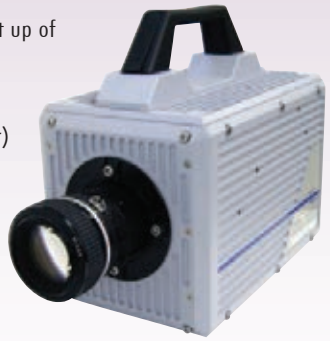
Areas where a high degree of motion analysis precision is demanded, such as automotive safety testing, weapons performance testing, fluid dynamics and solid mechanics will benefit from the combination of very high resolution, high framing rates, and typical Photron reliability.

The ability to operate at full HD resolution (1920 x 1080 pixels) at up to 2,000 fps will be a huge benefit to broadcast applications, including sports, nature documentaries, advertising and motion picture entertainment. The FASTCAM SA2 builds on Photron's Emmy award winning experience and is backed by the industry's best reputation for reliability and support.

As with every Photron high speed camera, ease of use and attention to details make the difference, with the FASTCAM SA2 supplied with the very easy to use Photron FASTCAM Viewer (PFV) software, or for those applications where a computer is not an option, an RS-422 optional keypad for camera control and image review.

Benefits

- Performance examples:
  - 2,048 x 2,048 pixels @ 1,080 fps
  - 1,920 x 1,080 pixels @ 2,000 fps
  - 1,024 x 1,024 pixels @ 3,200 fps
- Full HD resolution (1,920 x 1080 pixels) to 2,000 fps
- Incorporates Peltier temperature stabilized sensor and on-chip microlens array for optimum image quality and light sensitivity
- Available with three memory configurations:
  - 8GB for 1.29 seconds at 2,000 fps @ 1,920 x 1080 pixels
  - 16GB for 2.58 seconds at 2,000 fps @ 1,920 x 1080 pixels
  - 32GB for 5.17 seconds at 2,000 fps @ 1,920 x 1080 pixels
  - 64GB for 10.35 seconds at 2,000 fps @ 1,920 x 1080 pixels
- Rear panel has dual HD-SDI and one RS-170 BNC outputs for real time monitoring during setup, recording and playback
- Photron FASTCAM Viewer (PFV) computer control via the Gigabit Ethernet port
- Four user selectable function buttons for easy rear panel control of camera
- Low-light mode for initial set up of camera position and focus
- Monochrome or color sensor captures 12-bit (36-bit color) uncompressed data



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FASTCAM SA2

HIGH-DEFINITION HIGH-SPEED VIDEO SYSTEM

Specifications: Partial Frame Rate / Recording Duration Table

FRAME RATE (fps)	MAXIMUM RESOLUTION		MAXIMUM SHUTTER SPEED	RECORD DURATION (12-BIT)							
				TIME (Sec.)				FRAMES			
	Horizontal	Vertical		8GB Model	16GB Model	32GB Model	64GB Model	8GB Model	16GB Model	32GB Model	64GB Model
1,000	2,048	2,048	2.76 µs 1/367,000 sec	1.36	2.73	5.46	10.91	1,361	2,726	5,457	10,918
1,080	2,048	2,048		1.26	2.52	5.05	10.10	1,361	2,726	5,457	10,918
1,500	2,048	1,472		1.26	2.53	5.06	10.12	1,894	2,793	7,592	15,191
2,000	2,048	1,080		1.29	2.59	5.17	10.35	2,581	5,170	10,348	20,705
2,500	1,536	1,024		1.45	2.91	5.82	11.64	3,630	7,271	14,552	29,116
3,000	1,024	1,024		1.82	3.64	7.28	14.55	5,445	10,906	21,829	43,674
3,200	1,024	1,024		1.70	3.41	6.82	13.64	5,445	10,906	21,829	43,674
4,000	1,024	768		1.82	3.64	7.28	14.55	7,260	14,542	29,105	58,232
5,000	1,024	640		1.74	3.49	6.99	13.97	8,712	17,450	34,926	69,879
6,250	1,024	512		1.74	3.49	6.99	13.97	10,890	21,813	43,658	87,349
7,200	768	512		2.02	4.04	8.08	16.17	14,520	29,084	58,211	116,465
8,000	512	512		2.72	5.45	10.91	21.83	21,781	43,626	87,317	174,698
10,000	512	416		2.68	5.37	10.75	21.50	26,807	53,694	107,467	215,013
16,000	512	256		2.72	5.45	10.91	21.83	43,562	87,253	174,634	349,397
18,000	256	256		4.84	9.69	19.40	38.82	87,125	174,506	349,269	698,794
20,000	256	224		4.98	9.97	19.96	39.93	99,571	199,436	399,164	798,622
30,000	256	128		5.81	11.63	23.28	46.58	174,250	349,013	698,538	1,397,589
43,200	256	96		5.38	10.77	21.56	43.13	232,334	465,351	931,384	1,863,452
54,000	256	64		6.45	12.93	25.87	51.76	348,501	698,026	1,397,077	2,795,178
86,400	256	32		8.07	16.16	32.34	64.70	697,002	1,396,053	2,794,154	5,590,357

Sensor 10 µm pixels, temperature stabilized, 12-bit ADC (Bayer system color, single sensor) with microlenses

Shutter Global electronic shutter from 16.7ms to 2.76 µs independent of frame rate

Lens Mount Interchangeable F-mount and C-mount using supplied adapters, optional PL and B4 lens mounts

Extended Dynamic Range Selectable in twenty steps (0 to 95% in 5% increments) to prevent pixel over-exposure

Memory 8GB (standard: 1,361 frames @ Maximum resolution)
16GB (option: 2,726 frames @ Maximum resolution)
32GB (option: 5,457 frames @ Maximum resolution)
64GB (option: 10,918 frames @ Maximum resolution)

Video Outputs Live and playback video thorough Dual HD-SDI or single RS-170 (NTSC/PAL) outputs. Ability to zoom, pan and tilt within image via keypad.

Camera Control Through optional keypad with integrated viewfinder and Gigabit Ethernet or RS-422

User Preset Switches Four user selectable camera function controls mounted on the camera's 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

Phase Lock Event Markers Enables cameras to be synchronized precisely together to a master camera or external source
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

Trigger Modes Start, End, Center, Manual, Random, Random Reset, Random Center, Random Manual and Duals Speed Recording

Saved Image Formats JPEG, AVI, TIFF, BMP, RAW, PNG, MOV and FTIF. 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 recording in memory

Data Acquisition Supports Photron MCDL and DAQ

Cooling Actively cooled

Operating Temperature 0-40 degrees C (32 - 104 degree F)

Mounting 1 x 1/4 - 20 UNC, 1 x 3/8 - 16 UNC, 6x M6

Dimensions 165mm (6.5")H × 153mm (6.02")W × 250mm (9.84")D

Weight 6.9 kg (15.21 lbs)

Power Requirements 100V - 240V AC ~ 1.5A, 50 - 60Hz
DC operation 18 - 36 V DC, 100VA

Specifications subject to change without notice

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