

# FASTCAM SA3

A rugged, megapixel High-Speed imaging system for General Application and Automotive Safety Test recording

2,000fps operation at 1024 x 1024 pixels

Designed to provide ruggedness and reliability, the Photron FASTCAM SA3 offers high performance recording for a broad range of applications in research and development and automotive safety testing.

Like the award winning FASTCAM MH4 multi-head camera system the FASTCAM SA3 ensures system stability under HiG conditions and long term system reliability.

FASTCAM SA3 system design features built-in battery for backup of images stored in memory in case of power loss, optional keypad with integrated viewfinder and Gigabit Ethernet communication.

Utilizing the same CMOS imaging sensor as FASTCAM APX-RS, FASTCAM SA3 provides exceptional light sensitivity, image quality and colour fidelity.

Two FASTCAM SA3 models are available:

**Model 60K:** 1024 x 1024 pixel resolution at frame rates up to 1,000fps

**Model 120K:** 1024 x 1024 pixel resolution at frame rates up to 2,000fps

Both systems offer higher frame rates at reduced image resolution and two microsecond global shutter.



## FEATURES

- ❑ Performance examples:
  - FASTCAM SA3 Model 60K**  
1024 X 1024 pixels @ 1,000fps  
768 x 768 pixels @ 1,500fps  
512 x 512 pixels @ 3,000fps  
256 x 256 pixels @ 7,500fps  
and at reduced resolution up to 60,000fps
  - FASTCAM SA3 Model 120K**  
1024 X 1024 pixels @ 2,000fps  
768 x 768 pixels @ 3,000fps  
512 x 512 pixels @ 6,000fps  
256 x 256 pixels @ 15,000fps  
and at reduced resolution up to 120,000fps
- ❑ Recording in 12-bit or 8-bit data formats to extend record time.
- ❑ Suitable for operation in HiG environments. Operation tested to 100G, 10m sec, 6 axis.
- ❑ 17µm pixel size to ensure high light sensitivity for demanding frame rate or low light applications
- ❑ 2µs global shutter selectable independent of frame rate.
- ❑ Composite video output for real time monitoring during set up, recording and playback
- ❑ Optional remote keypad control with integrated viewfinder
- ❑ 2GB or 4GB recording memory options
- ❑ Internal battery for memory back up in case of power loss.
- ❑ High performance Gigabit Ethernet interface.

# Photron

**Frame Rate v Image Resolution:**

Frame Rate (fps)	FASTCAM SA3 Model 60K Maximum Resolution (pixels)	FASTCAM SA3 Model 120K Maximum Resolution (pixels)
1,000 fps	1024 x 1024	1024 x 1024
1,500fps	768 x 768	1024 x 1024
2,000fps	512 x 512	1024 x 1024
3,000fps	512 x 512	768 x 768
5,000fps	512 x 256	512 x 512
6,000fps		512 x 512
7,500fps	256 x 256	512 x 256
10,000fps	512x128	512 x 256
15,000fps	128 x 128	256 x 256
20,000fps	256 x 64	512 x 128
25,000fps	256 x 64	256 x 128
30,000fps	512 x 32	128 x 128
50,000fps	256 x 16	256 x 64
60,000fps	128 x 16	512 x 32
75,000fps	/	256 x 32
100,000fps	/	256 x 16
120,000fps	/	128 x 16

**Recording duration at 1,000fps with 1024 x 1024 pixel image resolution:**

	Standard 2GB memory capacity Seconds / (Frames)	Optional 4GB memory capacity Seconds / (Frames)
<b>8-BIT recording mode</b>	<b>2 seconds / 2,000 frames</b>	<b>4 seconds / 4,000 frames</b>
<b>12-BIT recoding mode</b>	<b>1.36 seconds / 1,360 frames</b>	<b>2.72 seconds / 2,720 frames</b>

Sensor	12-bit CMOS (Bayer system color, single sensor) with 17µm pixel size
Shutter	Global electronic shutter from 16.7ms to 2µs independent of frame rate
Lens Mount	Interchangeable F-mount and C-mount using supplied adapters
Memory	2GB (standard), 4GB (optional)
Internal battery	Internal battery for 30 minutes back up of data stored in memory
Video Output	NTSC/ PAL composite VBS (BNC). Ability to zoom, pan and tilt within image via keypad (option). Live video during recording.
Camera Control	Through optional keypad with integrated viewfinder and Gigabit Ethernet or RS-422A
Low light mode	Low light mode selection for simple camera adjustment when working in low ambient light, high frame rate or short exposure modes.
Triggering	Selectable positive or negative TTL 5Vp-p or switch closure
Trigger delay	Programmable delay on selected input and output triggers, 100ns resolution
Phase Lock	Enables cameras to be synchronized precisely together to a master camera or external source
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 (compressed or uncompressed) PNG 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 10 memory partitions may be set by the user.
Operating Temperature	0-40 degrees C
Mounting	1x ¼-20 UNC, 1x 3/8-16 UNC, 6x M6
Dimensions and Weight	220mm L x 120mm W x 120mm H, weight 4kg (without lens)
Power requirements	100V - 240V AC ~ 1.5A, 50-60Hz optional DC operation 18-36 VDC, 90VA

*Specifications subject to change without notice.*

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