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

2,000fps operation at 1024 x 1024 pixels

Designed referring to SAE-J211 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 High-G conditions and long term system reliability.

The FASTCAM SA3 offers remote control through user selectable camera controls on rear panel, Gigabit Ethernet communications or through optional RS422 keypad with built-in 5” LCD display.

The FASTCAM SA3 provides exceptional light sensitivity, image quality and color fidelity through genuine 12-bit ADC, with extra record time provided by selecting 8-bit record mode.

Two FASTCAM SA3 models are available, Model 60K and Model 120K. Both systems offer higher frame rates at reduced image resolution and two microsecond global shutter.

Benefits

- Performance:
  - FASTCAM SA3 Model 60K
    - 1024 x 1024 pixel resolution at frame rates up to 1,000 fps, and at reduced resolution up to 60,000 fps
  - FASTCAM SA3 Model 120K
    - 1024 x 1024 pixel resolution at frame rates up to 2,000 fps, and at reduced resolution up to 120,000 fps

- User selectable Variable Framerate / Resolution

- Suitable for operation in HiG environments. Operation tested to 100G, 10ms, 6 axis

- 17 μm pixel size to ensure high light sensitivity for demanding frame rate or low light applications

- 2 μs 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, 4GB or 8GB memory options

- 8-bit recording mode increases record duration by 50%

- High performance Gigabit Ethernet interface

- Optional battery backup to protect data in the event of unexpected power loss (Pictured below)
## Specifications: Frame Rate / Resolution Table

<table>
<thead>
<tr>
<th>FRAME RATE (fps)</th>
<th>MAXIMUM RESOLUTION</th>
<th>TIME (Sec.)</th>
<th>RECORD DURATION (12-BIT)</th>
<th>FRAMES</th>
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<tbody>
<tr>
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<td>Model 60K</td>
<td>Model 120K</td>
<td>Model 60K</td>
<td>Model 120K</td>
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**Sensor:** 12-bit ADC (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 (Optional High-G block mount available)

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

**Memory:** 2GB (standard), 4GB (optional) and 8GB (optional)

**Video Outputs:** NTSC/PAL composite VBS (BNC). Ability to zoom, pan and scroll within image via keypad (option). Live video during recording

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

**User Preset Switch:** User selectable camera function control mounted on the camera’s rear panel

**Low Light Mode:** Low light mode 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

**Timing:** Internal clock or external source

**IRIG Time Code:** IRIG/GPS timing is recorded in real time on every frame

**Event Markers:** Ten user entered event markers mark specific events within the image sequence in real time. Immediately accessible through software

**Variable FrameRate/Resolution:** User selectable Variable FrameRate/Resolution function adjustable in 128 x 16 pixel steps

**Selecting Recording Bit Depth:** User selectable 12-bit (high-dynamic range) or 8-bit (50% frame increase) recording mode

**Trigger Modes:** Start, End, Center, Manual, Random, Random Reset

**Saved Image Formats:** JPEG, AVI, TIFF, BMP, RAW, PNG, MOV, and TIF. 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, Resolution and LUT

**Partitioning:** Up to 8 memory partitions may be set by the user

**High-G:** Tested to 100G, 10ms, six-axis

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

**Mounting:** 1 x 1/4-20 UNC, 6 x M5 on all four sides

**Dimensions:** 120mm (4.72")H x 120mm (4.72")W x 215.8mm (8.50")D

**Power Requirements:** 100V-240V AC ~, 1.5A, 50-60Hz optional DC operation 22-32VDC, 60VA

**Specifications:** Specifications subject to change without notice

**Target Applications:**
- Onboard vehicle impact testing
- Military test ranges where a sealed unit is beneficial
- Particle Image Velocimetry (PIV)
- Digital Image Correlation (DIC)
- Biomechanics

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**PHOTRON USA, INC.**
9520 Paddett Street, Suite 110
San Diego, CA 92126-4446
USA
Tel: 858.684.3555 or at 800.585.2129
Fax: 858.684.3558
Email: image@photron.com
www.photron.com

**PHOTRON (EUROPE) LIMITED**
The Barn, Bottom Road
West Wycombe, Bucks, HP14 4BS
United Kingdom
Tel: + 44 (0) 1494 481011
Fax: + 44 (0) 1494 480711
Email: image@photron.com
www.photron.com

**PHOTRON LIMITED**
Fujimi 1-1-8
Chiyoda-Ku, Tokyo 102-0071
Japan
Tel: +81 (0) 3 3238 2107
Fax: +81 (0) 3 3238 2109
Email: image@photron.co.jp
www.photron.co.jp