

# Photron

FASTCAM Product Summary



## ***FASTCAM* SERIES**

High-Speed Imaging for Slow Motion Analysis

# Photron

Specifications subject to change

## HIGH PERFORMANCE

- High End Research
- Solid Mechanics (DIC)
- Fluid Mechanics (PIV)
- Defense
- Aerospace
- Combustion
- Microscopy
- High Voltage Discharge
- Laser Processing

## MID RANGE

- General R&D
- Fluid Dynamics (PIV)
- Solid Mechanics (DIC)
- Microscopy
- Biomechanics
- Welding Research

## ENTRY LEVEL

- Defense
- Fluid Dynamics (PIV)
- Solid Mechanics (DIC)
- Biomechanics
- Offboard Auto Safety Testing



DESCRIPTION	FASTCAM SA-Z	FASTCAM NOVA S6 / S9 / S12	MINI AX 50/100/200	MINI UX 50/100
Speed at full image resolution	20,000	6.4K / 9K / 12.8K	2K / 4K / 6.4K	2,000 / 4,000
Maximum image resolution (pixels)	1024 x 1024	1024 x 1024	1024 x 1024	1280 x 1024
Maximum speed at reduced image resolution (fps)	2,100,000	800,000 900,000 1,000,000	170,000 540,000 900,000	160,000 800,000
Sensitivity (excluding IR response) ISO 12232: Ssat Mono (Color)	50,000 (20,000)	64,000 (16,000)	40,000 (16,000)	10,000 (5,000)
Minimum shutter speed (µs)	1	1	1	3.9
Free optional sub-microsecond shutter – Subject to export control	159ns	0.2µs	260ns (AX200)	x
Memory capacity (Gigabytes)	32GB - 128GB	8GB - 64GB	8GB - 32GB	8GB - 32GB
Base memory capacity (frames)	5,453	5,437	5,457	4,365
Recording duration (seconds) @ max fps and full image resolution (with minimum memory)	0.27	0.85 / 0.61 / 0.43	2.73 / 1.36 / 0.85	1.09 / 0.54
Non-volatile storage	2x SD or 1TB external FAST Drive	1TB external FAST Drive	x	x
Supports long record duration (streaming)	x	x	x	x
Pixel size (µm)	20	20	20	10
Bit-depth	12 / 8	12	12	12
Variable region of interest (ROI)	✓	✓	✓	✓
Multi-head support	x	x	x	x
Lens mounts	Nikon F / G , EF, C	Nikon F / G , EF, C	Nikon F / G, EF, C, M42	Nikon F / G, EF , C
Closed Case "Range Version"	✓	✓	x	x
High-G operation	25g	30g	100g	100g
Fan Stop Function	✓	✓	✓	✓
Gigabit Ethernet Connection	✓ (dual)	✓	✓	✓
PC-Less operation with keypad	Optional	* Coming Soon	x	x
Saved image formats	BMP, TIFF, JPEG, PNG, RAWW, MRAW, AVI, MOV, MP4			
Supports Photron DAQ	✓	✓	✓	✓

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## HIGH RESOLUTION

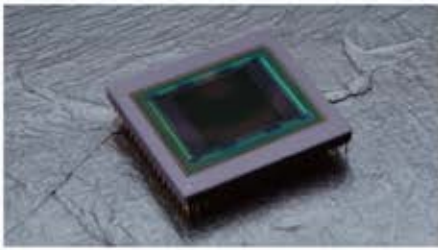
- Defense
- Fluid Dynamics (PIV)
- Solid Mechanics (DIC)
- Biomechanics
- Offboard Auto Safety Testing

## COMPACT, MULTI HEAD & HIGH-G

- Onboard and Offboard Auto Safety Testing
- Defense
- Fluid Dynamics (PIV)
- Solid Mechanics (DIC)
- Biomechanics
- Space Constrained Locations
- Synchronized Views



DESCRIPTION	MINI WX 50/100	FASTCAM MINI CX	FASTCAM MULTI	FASTCAM MH-6
Speed at full image resolution	750 / 1,080	750 / 1,000	4,800	750 / 1,000
Maximum image resolution (pixels)	2048 x 2048	1920 x 1400 1920 x 1080	1280 x 1024	1920 x 1400 1920 x 1080
Maximum speed at reduced image resolution (fps)	67,500 80,000	10,000	750,000	10,000
Sensitivity (excluding IR response) ISO 12232: Ssat Mono (Color)	6,400 (2,000)	10,000 (5,000)	10,000 (5,000)	12,500 (5,000)
Minimum shutter speed (µs)	2.7	4	3.9	4
Free optional sub-microsecond shutter – Subject to export control	x	x	x	x
Memory capacity (Gigabytes)	8GB - 32GB	8GB	8GB - 32GB	4GB / channel (6 heads) to 28GB / channel (single head) shared memory
Base memory capacity (frames)	1,361	3,860 (Full HD)	4,363	1 camera head: 12,600 2 camera heads: 5,400 3-4 camera heads: 2,700 5-6 camera heads: 1,800
Recording duration (seconds) @ max fps and full image resolution (with minimum memory)	1.81 / 1.26	3.86 (Full HD)	0.91	1.8 (FHD 6 heads) to 12.6 (FHD single head)
Non-volatile storage	x	Removable CFast Card	2TB external FAST Drive	512GB non-removable SSD
Supports long record duration (streaming)	x	x	✓	x
Pixel size (µm)	10	6.6	10	6.6
Bit-depth	12	10	12	8
Variable region of interest (ROI)	✓	x	✓	x
Multi-head support	x	x	2	6
Lens mounts	Nikon F / G, EF, C, M42	C	Nikon F / G, C, MFT	C
Closed Case "Range Version"	x	✓	✓	x
High-G operation	100g	150g	x	160g
Fan Stop Function	✓	Sealed body w/o fan	x	x
Gigabit Ethernet Connection	✓	✓ (& WiFi)	✓	✓ (& USB3)
PC-Less operation with keypad	x	x	Optional	* Coming Soon
Saved image formats	BMP, TIFF, JPEG, PNG, RAW, MRAW, AVI, MOV, MP4			
Supports Photron DAQ	✓	✓ incl. built-in accelerometer	2 channel, built-in	✓ incl. built-in accelerometer



### Credibility and reputation through technological achievement

Developments in advanced imaging technologies pioneered by Photron over the past 25 years are now being utilized in high-speed camera systems designed for a range of scientific and industrial applications. Photron has invested in the development of unique, advanced CMOS image sensors, the core technology of high-speed photography. Innovations in this area have led to a rapid increase in camera performance, allowing high-speed imaging to be applied to important new application areas.



### The highest quality design, manufacturing and support

As an ISO9001:2008 certified manufacturer, Photron manufactures its full range of high-speed camera systems at its own facility located in Yonezawa City, Yamagata Prefecture, Japan. International technical support centers located in the USA, Europe, Japan, and China ensure fast and professional local support for Photron camera users around the world.



### Photron is a leading name worldwide in high-speed imaging

Used in internationally renowned research facilities in more than 30 countries worldwide, Photron FASTCAM high-speed cameras are trusted to provide high quality results in the most challenging applications and environments. Photron continues to utilize the latest technological innovations to further advance product performance in order to meet the most demanding requirements from users around the world.



### High-speed imaging applications knowledge

For more than 30 years, Photron has focused on the design and application of high-speed imaging products. Photron application engineers have a wealth of knowledge and experience in demanding imaging requirements and are able to advise both new and experienced users on high-speed imaging solutions and imaging techniques to achieve optimum results.

## Local Representative

# Photron

PHOTRON USA, INC.  
9520 Padgett Street, Suite 110  
San Diego, CA 92126  
USA

Tel: 858.684.3555 or 800.585.2129  
Fax: 858.684.3558  
Email: [image@photron.com](mailto:image@photron.com)  
[www.photron.com](http://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 487011  
Email: [image@photron.com](mailto:image@photron.com)  
[www.photron.com](http://www.photron.com)

PHOTRON (Shanghai)  
Room 20C, Zhao-Feng  
World Trade Building  
No. 369, JiangSu Road  
ChangNing District  
Shanghai, 200050 China  
Tel: +86 (0) 5268-3700  
Email: [info@photron.cn.com](mailto:info@photron.cn.com)  
[www.photron.cn.com](http://www.photron.cn.com)

PHOTRON LIMITED  
Kanda Jinbo-cho 1-105  
Chiyoda-ku, Tokyo 101-0051  
Japan

Tel: +81 (0) 3 3518-6271  
Fax: +81 (0) 3 3528-6279  
Email: [image@photron.co.jp](mailto:image@photron.co.jp)  
[www.photron.co.jp](http://www.photron.co.jp)