

Photron

FASTCAM Product Summary



***FASTCAM* SERIES**

High-Speed Imaging for Slow Motion Analysis

KEY SPECIFICATIONS COMPARISON CHART

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 FASTDrive | 1TB external FASTDrive | 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" | Standard | Standard | x | x |
| High-G operation | 25g | 30g | 100g | 100g |
| Fan Stop Function | ✓ | ✓ | ✓ | ✓ |
| Gigabit Ethernet Connection | ✓ (dual) | ✓ | ✓ | ✓ |
| PC-Less operation with keypad | ✓ | ✓ | x | x |
| Saved image formats | BMP, TIFF, MTIF, RAW, MRAW, JPG, PNG, AVI, MOV, WMV | | | |
| Supports Photron DAQ | ✓ | ✓ | ✓ | ✓ |

KEY SPECIFICATIONS COMPARISON CHART

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Specifications subject to change

HIGH RESOLUTION

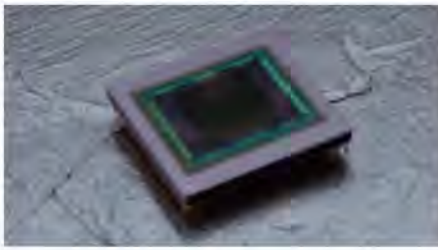
- Defense
- Fluid Dynamics (PIV)
- Solid Mechanics (DIC)
- Biomechanics
- Offboard Auto Safety Testing

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 FASTDrive | 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, EF, C, MFT | C |
| Closed Case "Range Version" | x | Standard | Standard | x |
| High-G operation | 100g | 150g | x | 160g |
| Fan Stop Function | ✓ | Sealed body w/o fan | x | x |
| Gigabit Ethernet Connection | ✓ | ✓ (& USB3 & WiFi) | ✓ | ✓ (& USB3) |
| PC-Less operation with keypad | x | ✓ | ✓ | ✓ |
| Saved image formats | BMP, TIFF, MTIF, RAW, MRAW, JPG, PNG, AVI, MOV, WMV | | | |
| Supports Photron DAQ | ✓ | ✓ incld. built-in accelerometer | 2 channel, built-in | ✓ incld. 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 subject 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 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

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