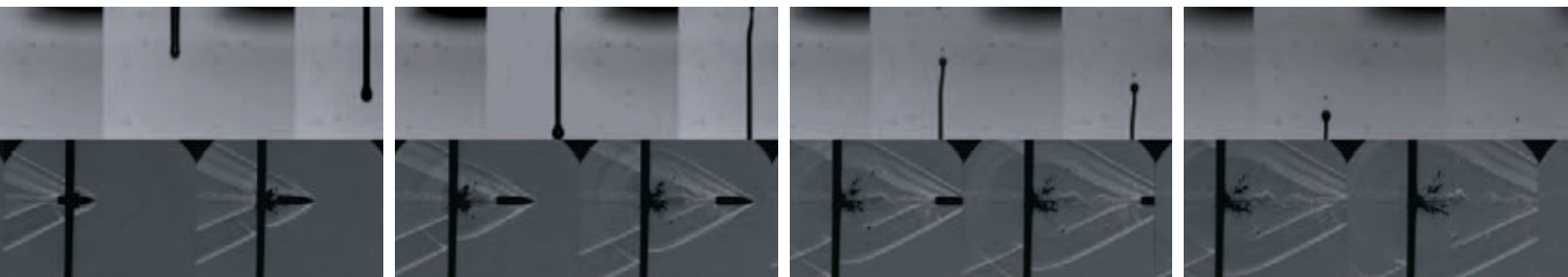# FASTCAM IS-1M
## ULTRA-HIGH SPEED CAMERA SYSTEM



## The world's leader in ultra-high-speed, high resolution recording

- Ultra-high-speed video recording at up to one million frames per second
- Ultra-high speed and high spatial resolution
- High-sensitivity CCD captures a wide range of high-speed phenomena

### Inkjet Printing
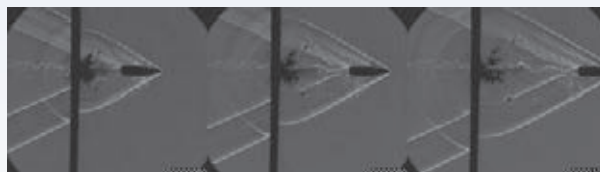
Recording speed: 250,000fps

This example shows the discharge of inkjet droplets. The images show the production of ink drops and satellite droplets during discharge, as well as the behavior of the meniscus at the nozzle port following discharge.

### Hypervelocity Impact

Recording speed: 500,000fps

This example shows a high-speed flying object, recorded using Schlieren photography. The images show how the high-speed flying object penetrates an obstruction. The shock wave generated as the object exceeds the speed of sound is clearly evident.

### Observation of materials failure during a CFRP static tensile test

Recording speed: 250,000fps

This example shows the failure of a carbon-fiber reinforced plastic (CFRP) 0-angle, unidirectional material. The images show the development of cracks orthogonal to the fibers in the material. The subsequent setting up of tears along the direction of the fibers is faithfully reproduced.
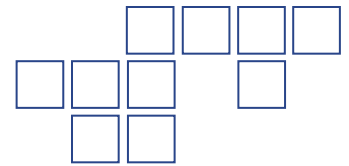




Images provided by Prof. Kleine, The University of New South Wales



Images provided by JAXA

# Photron
## www.photron.com

# FASTCAM IS-1M

## ULTRA-HIGH SPEED CAMERA SYSTEM

### Camera Head

| | |
|---|---|
| Lens Mount | Nikon F mount |
| Image Sensor | IS-CCD image sensor |
| Resolution | 312 (horizontal) x 260 (vertical) pixels |
| Color / Gradations | Monochrome, 10 bits [1] |
| Recording Speed [2] | 1M fps, 500k fps, 250k fps, 125k fps, 63k fps, 31k fps, 16k fps, 8k fps, 4k fps, 2k fps, 1k fps, 500 fps, 250 fps, 125 fps, 63 fps, 30 fps (fps: frames per second) |
| Frame Capacity | 100 frames |
| Exposure Time | Selectable OFF, 1/2, 1/4 or 1/8 of the frame rate (OFF, 1/2 and 1/4 available only at 1 million fps) [3] |
| External Trigger Input | TTL level (5 V), positive or negative, switch closure (normally open) |
| Synchronous Recording | Synchronous recording with up to 4 units |
| Interface | USB 2.0 (Hi-Speed) |
| External Monitor Output | NTSC output, or PAL output, selected at time of shipment |
| Clock Output | TTL level (5 V) |
| Recording Mode | Normal recording (external, internal trigger), programmed recording, continuous trigger, test exposure |
| Trigger Point Settings | Trigger point configurable from any frame |
| Data Memory Format | 10-bit dedicated format, BMP, AVI, JPEG, TIFF (16-bit format supported) |

### Power Unit

| | |
|---|---|
| Power Ratings | 100 V to 120 V / 200 V to 240 V, 50/60 Hz, 150 VA |

### Required Specifications for Control PC

| | |
|---|---|
| OS | OS: Windows 7 or Windows Vista [4] |
| CPU | Intel Core™ 2 Duo (1.8GHz) or faster |
| RAM | 2GB or more |
| HDD | 60GB or more |
| Screen Size | 13.3-inch WXGA (1280 x 800) or better |
| Interface | USB 2.0 [5] |
| External Recoding Device | DVD-ROM & CD-R/RW drive |
| Other Peripherals | Mouse or other pointing device |

### Environmental Conditions

| | |
|---|---|
| Operating Temperature Range | 5 °C to 40 °C |
| Operating Humidity Range | 35% to 75% RH with no condensation |

### Size/Weight

| | |
|---|---|
| Camera Head | 140 (W) mm x 145 mm (H) x 360 mm (D) approx. 5.3 kg (140 mm (W) x 175 mm (H) x 360 mm (D) including handle) |
| Power Unit | 150 mm (W) x 124 mm (H) x 336 mm (D) approx. 3.2 kg |
| Camera Head Cable Length | 2.5m |

### Others

| | |
|---|---|
| Standard Ratings | CE Class B compatible |

1) 10 bit is used to identify the data format, however data precision is not guaranteed.
2) The recording speed is a reference value.
3) These exposure times are rough indications and are not guaranteed as exact exposure ratios for all photographic speeds.
4) Windows® is a registered trademark of Microsoft Corporation in the US and other countries.
5) Does not guarantee operation of all types of connectable devices.

The IS-CCD used in this product will contain certain defective pixels, however this does not mean the product is defective or damaged. Also, depending on the photographic conditions used, (lighting, etc.) image coarseness, blur or extreme lightness/darkness may occur. These are due to the characteristics of the IS-CCD and do not mean the product is defective or damaged.

*Specifications subject to change without notice*