



Image of a water droplet landing in a saucer, this selection is taken from a sequence recorded at 500 frames per second with a 5 microsecond shutter. The crown or coronet produced by the droplet impact and, clearly shown in the far left image, has been adopted as the recognized icon of the high-speed photography community.

# ultima APX i2

FASTCAM

Photron's innovative APX system now integrated with high-performance gated image intensifier.

The FASTCAM ultima APX high-speed imaging system is now integrated with a 25mm Micro Channel Plate image intensifier, fibre-optically coupled to the sensor providing superb light sensitivity, exposure durations to 20 nanoseconds and extended spectral sensitivity.

The ultima APX-i2 provides true mega pixel resolution to 2,000 frames per second (fps) with gating down to twenty nanoseconds. The intensified head can be interchanged with either the monochrome or color camera heads on any existing ultima APX system; meaning one APX processor can support ALL three different camera heads without servicing or modification.

The ultima APX-i2 can also offset sequential frames by as little as 20 nanoseconds. This enables cyclical events to be recorded with one image per cycle, and as little time as 20 nanoseconds offset between frames to give an apparent framing rate of 50,000,000 fps at mega pixel resolution.

## BENEFITS

Full 1024 x 1024-pixels image resolution up to 2,000 fps and reduced resolution operation as fast as 250,000 frames per second

Image intensifier is bonded directly onto the CMOS sensor, not screwed on in place of a lens, for superior image quality

APX-i2 shares the same processor, functionality and specifications as ultima APX and as ultima APX and color, monochrome and intensified camera heads can be easily interchanged without tools

Exposure durations to 20 nanoseconds

Cyclical function for recording recurring ultra high-speed events such as ink jet printer heads with as little as 1ns offset

Control and operation provided through handheld keypad and Photron's PFV software

Phosphor and MCP make the APX-i2 ideal for flame and combustion studies



## SLOW MOTION IMAGING SOLUTIONS

# Photron®

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SPECIFICATIONS

Frame Rate (fps)	Max. Resolution		Record Time (seconds)		Record Time (frames)	
	Horizontal	Vertical	2.6GB	8GB	2.6GB	8GB
60	1024	1024	34.1	102.4	2,048	6,144
125	1024	1024	16.4	49.2	2,048	6,144
250	1024	1024	8.2	24.6	2,048	6,144
500	1024	1024	4.1	12.3	2,048	6,144
1,000	1024	1024	2	6.1	2,048	6,144
2,000	1024	1024	1	3.1	2,048	6,144
2,000	1024	768	1.3	4.1	2,730	8,190
3,000	512	1024	1.4	4.1	4,096	12,288
4,000	1024	512	1	3.1	4,096	12,288
6,000	512	512	1.4	4.1	8,192	24,576
8,000	1024	256	1	3.1	8,192	24,576
10,000	512	256	1.6	4.9	16,384	49,152
12,500	512	256	1.3	3.9	16,384	49,152
15,000	1024	128	1.1	3.3	16,384	49,152
15,000	256	256	2.2	6.6	32,768	98,304
20,000	128	256	3.3	9.8	65,536	196,608
24,000	512	128	1.4	4.1	32,768	98,304
30,000	256	128	2.2	6.6	65,536	196,608
40,000	512	64	1.6	4.9	65,536	196,608
50,000	256	64	2.6	7.9	131,072	393,216
87,600	256	32	3	9	262,144	786,342
100,000	128	32	5.2	15.7	524,288	1,572,864
120,000	128	16	8.7	26.2	1,048,576	3,145,728

<b>Sensor</b>	10-bit CMOS with 17µm pixel, and overexposure protection
<b>Intensifier</b>	25mm Gen 2 MCP Image Intensifier with short decay high brightness phosphor and 1,000x luminance gain. Other intensifier configurations available upon request
<b>Saved Image Formats</b>	AVI, JPEG, PNG (10-bit), TIFF, FTIF (10-bit), BMP, and Bayer and RS-170 Video output. Images can be saved with or without image or comment data
<b>Ext. Dynamic Range</b>	Selectable from 4 presets to prevent over exposure
<b>Phase Lock</b>	Enables cameras to be synchronized precisely together to a master camera or external source
<b>Triggering</b>	Selectable positive or negative TTL 5Vp-p, switch closure
<b>Lens Mount</b>	Interchangeable F-mount and C-mount supplied standard.
<b>Data Display</b>	Frame Rate, Shutter Speed, Trigger Mode, Date or Time (can be switched), Status (Playback/Record), Real Time, Frame Count, Resolution System or IRIG time, and user-edited comments can be displayed beside or in the saved image area for all formats
<b>Video Output</b>	NTSC or PAL. Live video during recording. Ability to zoom and pan within image via keypad
<b>Dual Speed Recording™</b>	Enables the recording speed to be changed, up or down, by a factor of 2, 4 or 8 during a recording
<b>Timing</b>	Internal clock or external source such as IRIG or GPS. Indicators show current status of timing source
<b>Event Markers</b>	Ten user-entered event markers mark specific events within the image sequence in real time. Immediately accessible through software
<b>Recording Modes</b>	Start, End, Center, Manual, Random, Random Reset, Random Center, Random Manual, and Dual Speed Recording™
<b>Partitioning</b>	Up to 64 memory segments for multiple recordings in memory
<b>Camera Control</b>	Through supplied keypad and RS-422A. And either via the Photron Gigabit Optical Network, Gigabit Ethernet or FireWire
<b>Software</b>	Includes image rotation and ability to save images with or without time codes or comment data
<b>Shock</b>	100G @ 10ms any axis
<b>Dimensions and Weight</b>	<b>Camera Head:</b> 5.61" (142.6mm) H x 4.88" (124mm) W x 5.59" (142.1mm) D <b>Weight:</b> 5.2 lb (2.4 kg) <b>Processor:</b> 8.39" (213.1mm) H x 5.51" (140mm) W x 12.08" (306.8mm) D <b>Weight:</b> 12.13 lb (5.5 kg)

Specifications subject to change without notice

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