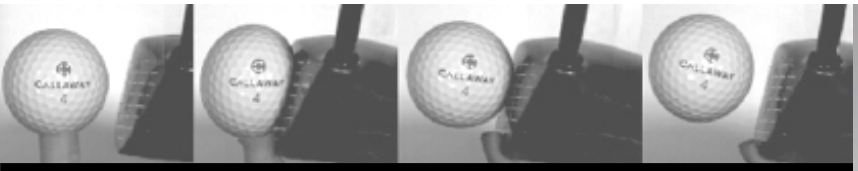
FASTCAM-X 1024 PCI™

Mega Pixel Resolution at 1,000 Frames per Second for the Personal Computer



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COMPUTER BASED HIGH SPEED SYSTEM OFFERS UNEQUALLED PERFOMANCE

The FASTCAM-X 1024 PCI from Photron is the world's first PC based high speed video system to provide 1,000 full mega pixel resolution frames per second (fps).

Utilizing a super light sensitive 10 bit CMOS sensor with large 17 micron square pixels, the 1024 PCI operates from 60 to 1,000 fps at full 1,024 by 1,024 pixel resolution, and at reduced resolution all the way to a top speed of 109,500 fps.

A global electronic shutter, operating down to 2 microseconds ensures even the fastest moving objects are frozen, blur free, in every image.

Variable aspect ratios are achieved through user selectable 'building blocks' 128 pixels wide by 16 pixel tall that are automatically configured for the selected framing speed; from 60 to 109,500 fps. Twenty 'memory slots' are available for operators to save commonly used speed and resolution settings for future use.

The expandable memory (currently available in either 2 or 6 Gigabyte options) can be partitioned to facilitate multiple recordings to be made in quick succession, without needing to download between recordings. When all selected partitions have been filled, the entire memory can be downloaded in AVI, TIFF, JPEG, or other popular standard 8 or 10 bit image formats.

PRODUCT FEATURES

- Variable speed resolutions, including:
  - 1,024 x 1,024 at 1,000 fps.
  - 512 x 512 pixels at 3,000 fps
  - 27,000 fps at 128 x 128
  - Any resolution in 128 x 16 pixel 'blocks'
- Global shuttering to 2μs, independent of frame rate selected.
- Expandable memory offers several record durations, including:
  - 2GB for 1.54 seconds at 1,000 fps.
  - 6GB for 4.61 seconds at 1,000 fps.
  - 12GB and 24GB options planned 2005.
- Fits in single PCI slot, regardless of memory configuration selected.
- Reduced resolution to 109,500 fps.
- Camera is connected to PCI card by a single 16 foot (5m) flexible cable.

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CHART SHOWING PARTIAL SPEED/RESOLUTION/RECORD TIMES:

(Resolutions are user programmable in 128 pixel wide by 16 pixel high blocks)

Frame	Resolution		Record Time (Seconds)						
Rate (fps)	Horizontal	Vertical	2GB	4GB	6GB	8GB	12GB	16GB	24GB
60	1,024	1,024	25.6	51.2	76.8	102.4	153.6	204.8	307.2
125	1,024	1,024	12.3	24.6	36.9	49.2	73.7	98.3	147.5
250	1,024	1,024	6.1	12.28	18.4	24.6	36.8	49.1	73.7
500	1,024	1,024	3.1	6.1	9.2	12.3	18.4	24.6	36.8
1,000	1,024	1,024	1.5	3.08	4.6	6.2	9.2	12.3	18.5
2,000	1,024	512	1.6	3.2	4.8	6.4	9.6	12.8	19.2
3,000	512	512	2.1	4.26	6.4	8.5	12.8	17.0	25.6
6,000	512	256	2.1	4.2	6.3	8.4	12.6	16.8	25.2
10,000	256	256	2.6	5.22	7.8	10.4	15.7	20.9	31.3
18,000	256	128	2.6	5.2	7.8	10.4	15.6	20.8	31.2
27,000	128	128	3.9	7.74	11.6	15.5	23.2	31.0	46.4
45,000	128	64	4.6	9.3	13.9	18.6	27.8	37.1	55.7
73,000	128	32	5.7	11.44	17.2	22.9	34.3	45.8	68.6
109,500	128	16	3.8	7.6	11.4	15.2	22.8	30.4	45.6

Sensor	CMOS (Bayer system color, single sensor) with 17µm pixel with global electronic shutter from 10ms to 2µs independent of frame rate
Extended Dynamic Range	Four resets prevent pixel over-exposure.
Saved Image Formats	JPEG, AVI, TIFF, BMP, RAW (compressed or uncompressed) PNG (10bit), and FTIF (10 bit)
Memory:	Seven different memory options ranging from 2GB to 24GB dependent on maximum record time required (see table above). All configurations use only a single PCI slot.
Resolution	In addition to pre-selected resolutions, twenty memory slots are available for users to store frequently used memory configurations conforming to the 128 pixel wide by 16 pixels high pattern..
Phase Lock	Enables cameras to be synchronized precisely together to a master camera or external source
Triggering	Selectable positive or negative TTL 5Vp-p, switch closure
Lens Mount	Interchangeable F-mount and C-mount using supplied adapters.
Camera Cable	16.4' (5m) – can be extended with optional camera cable repeaters
Data Display	Frame Rate, Shutter Speed, Trigger Mode, Date or Time (can be switched), Status (Playback/Record), Real Time, Frame Count and Resolution
Timing	Internal clock or external source such as IRIG or GPS (requires optional software module)
Event Markers	User-entered event markers are available to mark specific events within the image sequence in real time. Immediately accessible through software
Recording Modes	Start, End, Center, Manual, Random, Random Reset, Random Center, Random Manual and Dual Speed Recording™
Partitioning	Up to 24 memory segments for multiple recordings in memory
Camera Head Dimensions	(no lens mount)**:** 4.72” (120mm) W x 4.72” (120mm) H x 4.33” (110mm) D

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