Photron Fastcam™ Ultima 40K

ROPER SCIENTIFIC ™

HIGH SPEED VIDEO RECORDING

The Fastcam™ Ultima 40K is an ultra high-speed digital video recording system with the ability to record up to 4500 full frames per second, and up to 40500 partial frames per second for immediate playback. These fast frame rates allow motion analysis and image storage of extremely rapid events such as air bag deployment, disk drive head movement, and ballistics studies.

INSTANT ANALYSIS

Operating as a digital image recorder, the system can store up to 24576 full frames and up to 393216 partial frames in electronic memory. Digital images can be replayed from memory for instant viewing.

POWERFUL TRIGGERING

The capture of unpredictable events is readily accomplished using the electronic triggering features of the The Fastcam™ Ultima 40K. Trigger signals can be received from a variety of sources including optical, acoustical, impact, acceleration, temperature and proximity sensors.

Frames can be stored as pre-trigger or post-trigger images, or as a combination of both. Individual and discrete groups (1, 2, 4, 16, 64, 128 and 256) of frames may also be recorded.

SHARP, CLEAR IMAGES

The 256 x 256 pixel sensor produces sharp images with 256 levels of gray. In addition, the light sensitivity of the system is excellent, reducing the need for supplemental lighting.

Once captured by the Fastcam™ Ultima 40K, the stored images can be downloaded to standard video tape for future reference and analysis. Alternatively, digital download is provided trough the SCSI – 2 interface as a standard feature with easy to use software to allow TIFF or BMP format image files to be exported to a PC for viewing and automated motion analysis.

Exceptional High-Speed:
Records up to 4500 full frames per second or up to 40500 partial frames per second.

Electronic Memory:
Images are stored in digital memory and are available for immediate playback.

Large Format Sensor:
256 x 256 pixels, each with a 256 gray level response.
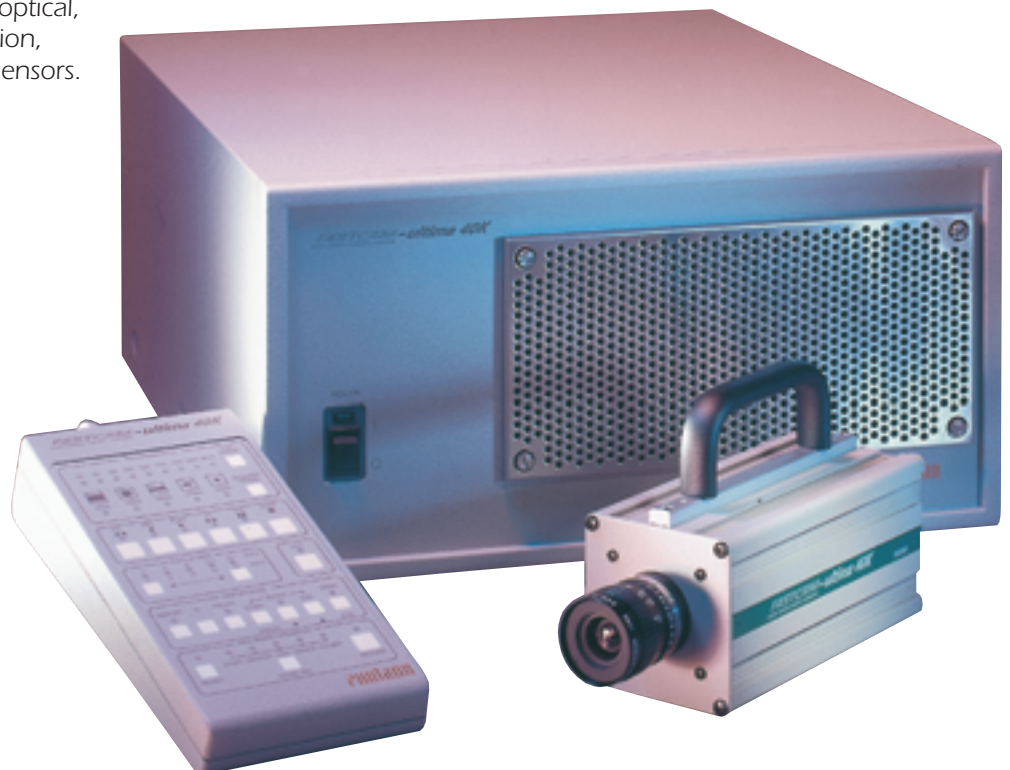
Standard Video Output:
For computer acquisition and VCR storage of images.

Digital download interface
Transfers images to a PC via SCSI-2 bus. Facilitates PC-based motion analysis applications.

Large memory capacity
Stores up to 24576 full frames or 393216 partial frames

Specifications — Photron Fastcam™ Ultima 40K

Resolution:	256 x 256 pixels.
Gray Scale:	8 bits, 256 levels.
Hand-held Keypad:	For control of system operation. Cable length is 4 meter. Touch pad control.
Recording Technique:	Digital images stored in Dynamic Random Access Memory (DRAM).
Recording Modes:	**START:** Records images until memory is full and then stops; **END:** Continually records images until trigger is received. Pre-trigger frames are saved in memory; **CENTER:** Continually records images until trigger signal is received. When signal is received, half of the memory is saved as pre-trigger frames, and half are saved as post-trigger frames. **RANDOM:** 1, 2, 4, 16, 64, 128, and 256 frames are recorded after each trigger is received.
Recording Rates:	30, 60, 125, 250, 500, 750, 1125, 2250, 4500 full frames per second. 9000, 13500, 18000, 27000, 40500 partial frames per second.
Exposure Time:	Exposure times are the inverse of the frame rate.
Frame Storage Options:	8192 full frames.
	16384 full frames.
	24576 full frames.
Playback Rates:	2, 5, 10, 15 or 30 frames per second (NTSC);
	2, 4, 8, 12 or 25 frames per second (PAL);
	Single step and fast (10X) forward/reverse;
	User-selectable block playback.
Video Signal:	RS-170 video (NTSC or PAL).
Data Displayed on Monitor:	ID number; record status; frame number; playback status; operating status; elapsed time.
External Signal Inputs:	Trigger IN (opto-isolator), Trigger SW IN (make/break), and EXT IN (external sync).
External sync input:	5 V p-p, negative going
External trigger input:	TTL or contact closure
Signal Outputs:	Video 1 and 2, external out (switchable from sync to recording mode status). Digital Data Interface (DDI) for image transfer via SCSI-2 bus.
Sync signal output:	5V p-p, negative going
Digital output:	SCSI-2, including Windows NT™ - compatible image download software for PC
Processor dimensions:	43 cm width; 22 cm height; 50 cm length; 20 kg weight
Camera cable length:	5 meter standard; 15 meter optional
Camera head dimensions:	8.5 cm width; 8.5 cm height; 19 cm length; 1.2 kg weight
Power:	110/220 VAC, 50/60 Hz, 500 VA.
Lens Mount:	C-mount.
Power requirement:	85 to 264 VAC, 50/60 Hz, 500 VA
Operating temperature:	0 to +45° C
Storage temperature:	-20 to +70° C
Emission/Safety standards:	meets all applicable international standards
Note:	FASTCAM is a registered trademark of Photron