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FocusScope SV200-i

Designed specifically for high speed microscopy, the *FocusScope SV200-i* incorporates the latest Generation III image intensifier technology to offer enhanced image resolution and broad spectral response

Providing recording rates of up to 2,000fps at 512x512 pixel image resolution the FocusScope SV200-i utilizes the high resolution performance and broad spectral response of Generation III image intensifier technology to provide an integrated imaging solution for high speed microscopy applications.

To obtain the highest optical efficiency the FocusScope SV200-i camera head incorporates a 512x152 pixel advanced CMOS imaging sensor fiber-optically coupled to an 18mm Generation III image intensifier module. The camera head provides a C-mount thread for attachment to standard optical microscopes and objective lenses. Image intensifier controls are conveniently located on the camera head.

A single 6 meter cable connects the SV200-i camera head to a standard PCI format control card. Incorporated on the control card is 2.6GB recording memory allowing a recording time of 8.2 seconds at 1,000fps with 512x512 pixel image resolution.

System control is achieved through Photron *FASTCAM* Viewer software providing an intuitive operation environment. *FASTCAM* SDK software provided with the system allows user specific control commands to be integrated within other environments.

FEATURES

- System designed for extreme low light fluorescence and microscope recording at high frame rates.
- Advanced CMOS imaging sensor offering 512 x 512 pixel image resolution at frame rates up to 2,000frames per second.
- 10 bit sensor dynamic range.
- Global electronic shutter providing exposure durations from 1/frame rate to 4μs independent of frame rate.
- Extreme light sensitivity provided through a fiber optically coupled Generation III high resolution image intensifier. [luminous gain 2.2 x 10^4 (lm/m^2)/lx]
- GaAsP photocathode providing broad spectral response over the range 280 – 720nm (peak sensitivity 530nm).
- Intensifier over brightness protection through phosphor surface current detection.
- Small and lightweight camera head suitable for integration with standard optical microscopes.
- User selectable Start, Centre, End and Manual trigger modes.
- Integrated system operation through *FASTCAM Viewer* control software and *FASTCAM SDK*.

Photron

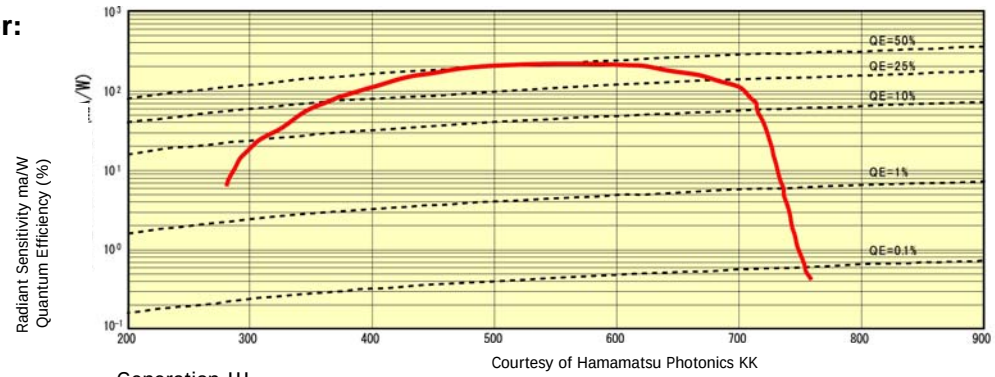
Sensor, Camera and Control / Memory Card:

Frame Rate (fps)	Max. Image Resolution (pixels)	Exposure Time	Recording Time (seconds)	Recording Time (frames)
60	512 x 512	1/frame rate to 4µs	136.5	8,192
125			65.3	
250			32.8	
500			16.4	
1,000			8.2	
2,000			4.1	

Sensor	Advanced CMOS, 512 x 512 pixels, 10 bits, monochrome
Sensor size	2/3 inch (pixel size 16µm x 16µm)
Frame rate	60 to 2,000fps at full pixel resolution
Shutter	Global electronic shutter from 1/frame rate to 4µs (independent of frame rate)
Sensor Gain	x1, x2, x4 or x8 selectable through software
Lens mounting	C mount
Live image display	On PC monitor
External Sync.	Enables cameras to be synchronized precisely together to a master camera or external source
Timing	Internal clock or external source
Triggering	Selectable positive or negative TTL 5Vp-p, switch closure
Recording Modes	Start, End, Center, Manual, Random, Random Reset, Random Center, Random Manual
Recording Memory	2.6GB DRAM memory (on PCI control card)
Memory Partitioning	Up to 8 memory segments for multiple recordings in memory
Dual Frame Rate mode	Changes frame rate during recording through signal input to 2x, 4x or 8x initial frame rate
Data Display	Frame Rate, Shutter Speed, Trigger Mode, Date or Time (can be switched), Status (Playback/Record), Real Time, Frame Count and Resolution
Saved Image Formats	AVI, JPEG, TIFF, BMP, PNG, RAW (compressed or uncompressed)
Camera cable	5m standard (option 10m)
Control/Memory card	PCI standard single slot (rev 2.1)
Camera Control	Through supplied Photron FASTCAM Viewer software or FASTCAM SDK
Camera Head Dimensions	H x W x D 110.7mm x 85.4mm x 76.5mm

Image Intensifier:

Spectral Response



Courtesy of Hamamatsu Photonics KK

Image Intensifier type	Generation III
Operation mode	DC
Input/output size	18mm
Input window material	Borosilicate Glass (transmission to 300nm)
Photocathode material	GaAsP
Photocathode sensitivity	280 – 720nm
Photocathode peak sensitivity	530nm
Phosphor material	P43
Phosphor decay time	1ms (to 10%)
Coupling to sensor	Fiber optic
Luminous gain	22,000 (lm/m^2) lx
Radiant gain	14,000 (W/m^2)/ (W/m^2)
Intensifier protection	Overload cut-out function incorporated

Specifications subject to change without notice.

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