Photometrics®

SenSys:0402E

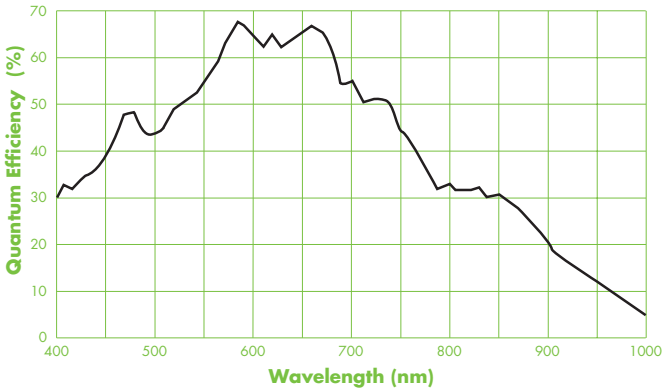
768 x 512 imaging array
9 x 9-µm pixels

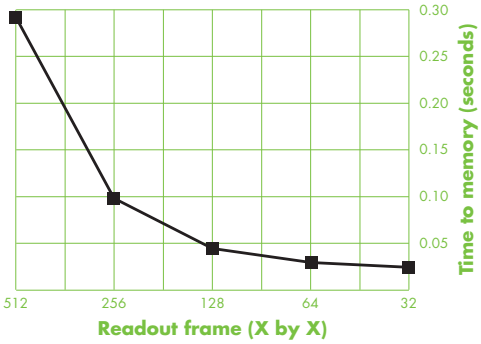
The Photometrics® SenSys:0402E from Roper Scientific® is a video-resolution, 12-bit, digital camera system designed for low-light scientific and industrial applications. The fine pitch of the pixels, 9 x 9 microns, is well matched to the resolution of optical microscopes; high resolution and small pixels allow imaging of very fine detail, yet the pixels can be easily binned to improve sensitivity. The camera system's cooled CCD uses indium tin oxide (ITO) technology to raise quantum efficiency, particularly in the blue/green region of the spectrum.

Features	Benefits
768 x 512 imaging array 9 x 9-µm pixels	Resolves fine detail Well matched to optical microscope
Scientific-grade CCD	Few defects and hot pixels
Single-window imaging path	Minimizes reflections and distortion Higher QE performance
ITO transparent gates	Higher QE performance throughout visible spectrum
Three detection modes	Optimized for high sensitivity, high dynamic range, and high signal-to-noise ratio (SNR)
Flexible binning and readout	Increases light sensitivity while increasing frame rate
12-bit digitization	Quantifies bright and dim signals in the same image
Thermoelectric cooling	Long integration times for higher sensitivity
C-mount or F-mount with shutter	Selectable for best optical path Easily attaches to standard lenses or optical equipment
Compact camera head	Easily fits your instrument of choice
PCI interface*	Works with PC, Macintosh, Linux®
Detailed test report	Proven performance characteristics

*Contact Roper Scientific for compatibility details.

Photometrics SenSys®

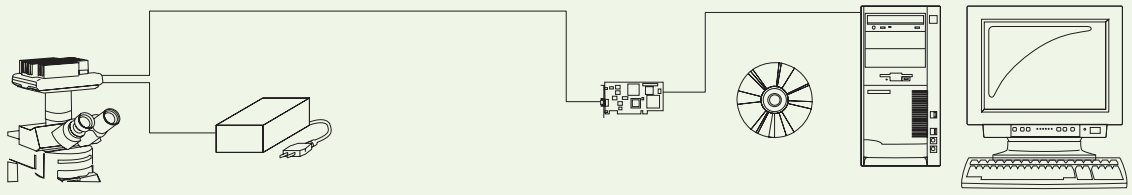




To calculate total frame read time, add exposure time and shutter open and close delays to "time to memory."

Specifications

CCD image sensor	Kodak KAF0402E; scientific-grade, MPP device; Metachrome® II UV enhancement (optional)
CCD format	768 x 512 imaging pixels plus 14/14 serial pre/postscan pixels; 4/4 parallel pre/postscan rows; 9 x 9-µm pixels; 100% fill factor; progressive scan; 6.9 x 4.6-mm imaging area (optically centered)
Grades	Grade 1: ≤5 point defects, 0 cluster defects, 0 column defects Grade 2: ≤10 point defects, ≤4 cluster defects, ≤2 column defects
User gains	Three user-selectable detection modes or gains: high sensitivity, high dynamic range, high SNR
Linear full well	178,000 e- @ 0.5x; 87,000 e- @ 1x; 22,000 e- @ 4x
Read noise	25 e- rms @ 0.5x; 20 e- rms @ 1x; 11 e- rms @ 4x
Nonlinearity	≤0.5%
Readout bits/speed	12 bits @ 1.4 MHz
Parallel shift rate	16.4 µsec/row
Serial discard rate	0.1 µsec/pixel
Frame readout	0.41 seconds for full frame
Dark current	1.0 e-/p/s with passive-air cooling (+10°C)
Operating environment	0 to 40°C ambient, 0 to 70% relative humidity



Note: Specifications are typical and subject to change.

When you're *SERIOUS* about high-performance imaging...

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