PHOTOMETRICS

HIGH-PERFORMANCE EMCCD & CCD CAMERAS FOR LIFE SCIENCES

Photometrics CoolSNAP HQ²

1392 x 1040 imaging array
6.45 x 6.45-µm pixels

The CoolSNAP$_{HQ^2}$ Monochrome camera from Photometrics® delivers fast, high-resolution imaging for quantitative fluorescence microscopy applications. This cooled CCD camera provides a large dynamic range with very low noise at both 10 MHz and 20 MHz. The fine pitch of the pixels is ideally matched to the resolution of optical microscopes. Megapixel resolution and small pixels allow imaging of very fine detail, yet the pixels can be easily binned to improve sensitivity. Advanced interline-transfer CCD technology provides high quantum efficiency, most notably in the near-infrared (NIR) portion of the spectrum.

Primary applications

Live-cell imaging

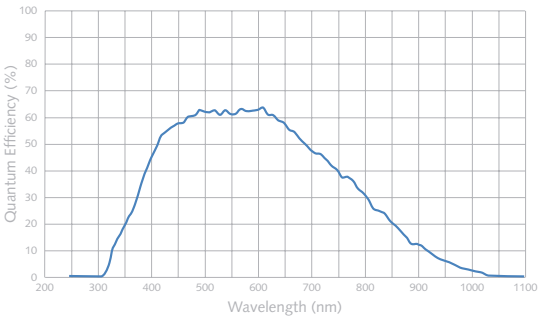
High-speed emission ratio imaging

Low-copy gene analysis and gene expression profiling

Quantitative FRET, FRAP, FISH

Luminescence

Features	Benefits
10-MHz and 20-MHz readout	Dual-mode readout for variable-speed image capture
1392 x 1040 imaging array 6.45 x 6.45-µm pixels	Resolves fine detail Ideally matched to optical microscope
Interline-transfer, progressive-scan CCD	Electronic shuttering eliminates camera vibration and facilitates fast triggering
Flexible binning and readout	Increases signal-to-noise performance while increasing the frame rate
IEEE-1394a or PCI interface	High-bandwidth, uninterrupted data transfer with no dropped frames
Digitization IEEE-1394a PCI	Quantifies bright and dim signals in the same image 14-bit digitization 12-bit digitization
Thermoelectric cooling	Special cooling package virtually eliminates dark current
Enhanced quantum efficiency	Provides higher sensitivity than typical interline cameras (especially in the NIR)
C-mount	Easily attaches to microscopes, standard lenses, or optical equipment
Acquisition software	Captures, analyzes, and saves high-resolution images
PVCAM® Circular buffers Device sequencing *IEEE-1394a compatibility* *PCI compatibility*	Supported by numerous third-party software packages Real-time focus Precise integration with shutters, filter wheels, etc. *Windows® XP/Vista 32 and Mac OS X* *Windows XP/Vista 32, Mac OS X, and Linux® (kernel versions 2.4 and 2.6.8)*



Region

Binning	1392 x 1040	512 x 512	256 x 256
1 x 1	11	21	36
2 x 2	20	36	58
3 x 3	28	48	71
4 x 4	35	57	81
8 x 8	56	81	104

(Frames per second)

Note: Frame rates are measured at 20 MHz with up to 90-millisecond exposure times.

	Specifications
CCD image sensor	Sony® ICX285; interline-transfer, progressive-scan device with microlenses
CCD format	1392 x 1040 imaging array 6.45 x 6.45-µm pixels 8.98 x 6.71-mm imaging area (optically centered)
Grade	Sony Grade 0
System gain	1 e-/ADU
Linear full well	16,000 e- (single pixel) 30,000 e- (2 x 2 binned pixel)
Read noise	4.5 e- rms @ 10 MHz 5.5 e- rms @ 20 MHz
Nonlinearity	<1%
Digitizer type IEEE-1394a LVDS	 14 bits @ 20 MHz or 10 MHz (software selectable) 12 bits @ 20 MHz or 10 MHz (software selectable)
Frame readout	90 ms/frame
CCD temperature	-30°C (regulated)
Dark current	0.001 e-/p/s @ -30˚C
Operating environment	0 to 30˚C ambient, 0 to 80% relative humidity noncondensing
Dimensions	4.5" x 4.0" x 7.0" (6.5 lbs)
I/O	TTL (trigger/status): trigger, invert, inhibit, exposing, interline shift, frame readout 8-bit TTL (programmable) 8-bit DACs (two)

Note: Specifications are typical and subject to change.

PHOTOMETRICS®

www.photomet.com
info@photomet.com
USA +1.520.889.9933
Asia Pacific +65.6841.2094
France +33.1.60.86.03.65
Germany +49.89.660.779.3
Japan +81.3.5639.2731
UK +44.1628.890858