



DATASHEET

Q U A N T I T Y S T E M

Quantix:57 Photometrics 535 x 512 imaging array 13 x 13- μ m pixels

The Photometrics Quantix:57 is a back-illuminated, frame-transfer CCD camera utilizing the Marconi CCD57-10. This camera combines the sensitivity of back-illuminated technology with the speed of frame-transfer readout. The Quantix:57 provides one of the smallest pixel sizes available in a back-illuminated CCD system. The 12-bit analog-to-digital converter can be operated at 1, 2, or 3 MHz for high-speed conditions. Furthermore, the camera can be operated in kinetics mode, where bursts of images are acquired at ultrahigh rates. These features make the Quantix:57 ideal for live-cell fluorescence imaging and other demanding low-light, high-speed applications.

F E A T U R E S

B E N E F I T S

1-, 2-, or 3-MHz digitization	Fast image readout for high-speed focus and image capture
535 x 512 imaging array 13 x 13- μ m pixels	Resolves fine detail Large full well
Frame-transfer CCD	Facilitates faster frame rates Integrates while reading CCD
Back-illuminated CCD	Highest sensitivity throughout visible spectrum
Single-window imaging path	Minimizes reflections and distortion Higher QE performance
Three detection modes	Optimized for high sensitivity, high dynamic range, and high SNR
Flexible binning and readout	Increases light sensitivity while increasing the frame rate
12-bit digitization	Quantifies both 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 the best optical path Easily attaches to standard lenses or optical equipment
PCI interface	Works with PC, Macintosh, Linux [®]
Detailed test report	Proven performance characteristics

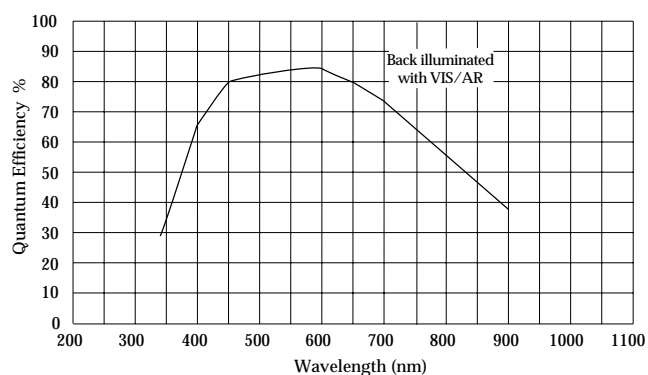


Photometrics
Quantix



D A T A S H E E T

Q U A N T I X S Y T E M



		Region		
		535 X 512	200 X 200	100 X 100
Binning	1 X 1	10	30	65
	2 X 2	25	65	130
	4 X 4	47	120	230

(Frames per second)

Frame rates are measured at 3 MHz with 0-second exposure times.

S P E C I F I C A T I O N S

CCD image sensor	Marconi CCD57-10; scientific grade; back-illuminated, frame-transfer CCD; Metachrome® II or Unichrome UV enhancement (optional)
CCD format	535 x 512 imaging pixels plus 13/6 serial pre/postscan pixels; 13 x 13-µm pixels; 100% fill factor; 6.9 x 6.8-mm imaging area (optically centered)
Grade	Grade 1: ≤50 dark defects, ≤2 traps, ≤3 column defects
User gains	Three detection modes or gains; software selectable; high sensitivity, high dynamic range, high SNR
Linear full well	260,000 e ⁻ @ 0.5x; 125,000 e ⁻ @ 1x; 31,000 e ⁻ @ 4x
Read noise (1/3 MHz)	High signal-to-noise ratio – 47/47 e ⁻ rms @ 0.5x; High dynamic range – 30/30 e ⁻ rms @ 1x; High sensitivity – 15/15 e ⁻ rms @ 4x
Nonlinearity	≤1.0%
Readout bits/speed	12 bits @ 1 MHz, 2 MHz, or 3 MHz; software selectable
Parallel shift rate	500 ns/row
Serial discard rate	0.167 µsec/pixel
Frame readout	10 frames/sec max, full frame; 0.265 ms image-to-storage shift time
Dark current	29 e ⁻ /p/s with forced-air cooling (-25°C); 18 e ⁻ /p/s with liquid cooling (-35°C)
Operating environment	0 to 30°C ambient, 5 to 70% relative humidity noncondensing (5 to 80% RH for F-mount)

Note: Specifications are typical and subject to change.