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## Quantix:57

Photometrics

535 x 512 imaging array  
13 x 13- $\mu$ 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.

### FEATURES

### BENEFITS

|  |   |
|--|---|
| 1- 2-, or 3-MHz digitization                       | Fast image readout for high-speed focus and image capture                                       |
| 535 x 512 imaging array<br>13 x 13- $\mu$ m pixels | Resolves fine detail<br>Large full well   |
| Frame-transfer CCD                                 | Facilitates faster frame rates<br>Integrates while reading CCD                                  |
| Back-illuminated CCD                               | Highest sensitivity throughout visible spectrum   |
| Single-window imaging path                         | Minimizes reflections and distortion<br>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<br>Easily attaches to standard lenses or optical equipment |
| PCI interface                                      | Works with PC, Macintosh, Linux®  |
| Detailed test report                               | Proven performance characteristics  |

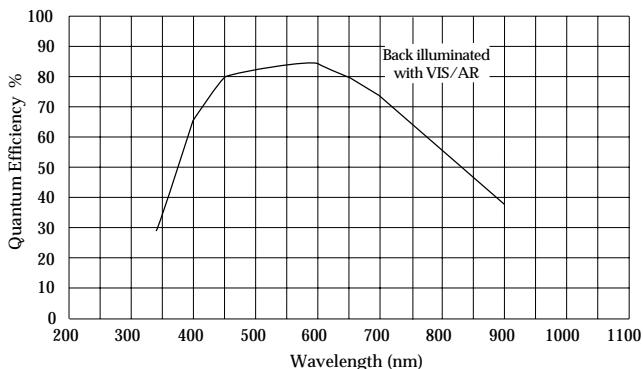


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Region

|       | 535 X 512 | 200 X 200 | 100 X 100 |
|-------|-----------|-----------|-----------|
| 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.

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|                       |  |
|-----------------------|--|
| 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: $\leq 50$ dark defects, $\leq 2$ traps, $\leq 3$ 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          | $\leq 1.0\%$   |
| 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.

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Quantix:57 Rev B0