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## Quantix:7899 Photometrics® 2048 x 2072 imaging array 14 x 14-µm pixels

The Photometrics Quantix:7899 CCD camera is ideal for large-area scientific imaging applications that require excellent quantitative data acquisition. This low-noise imaging system provides more than four million pixels in a photoactive array measuring over 28 x 28 mm. The 12-bit, 5-MHz camera features a scientific-grade, front-illuminated device with peak quantum efficiency (QE) spanning the wavelength range between 650 and 800 nm. Liquid cooling and state-of-the-art electronics are utilized to suppress various sources of system noise.

### F E A T U R E S

### B E N E F I T S

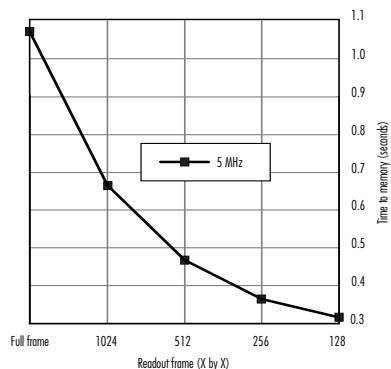
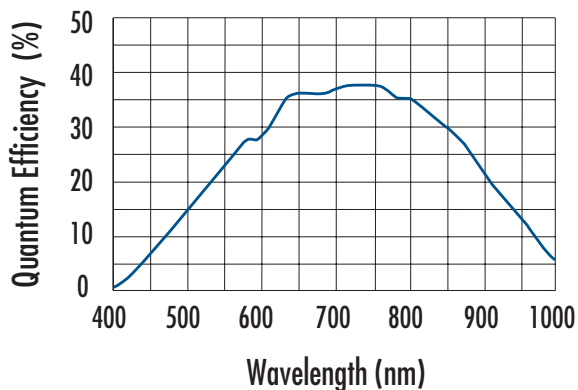
3- or 5-MHz digitization	Fast image readout for high-speed focus and image capture
2048 x 2072 imaging array 14 x 14-µm pixels	Large format Large field of view
Single-window imaging path	Minimizes reflections and distortion Higher QE performance
Three detection modes	Optimized for high sensitivity, high 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
F-mount with shutter	Easily attaches to standard lenses or optical equipment
PCI interface	Works with PC, Macintosh, Linux®
Detailed test report	Proven performance characteristics
Optional fiberoptic coupling	Suitable for x-ray applications





# D A T A S H E E T

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

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

CCD image sensor	Atmel TH7899M; scientific grade; front-illuminated, full-frame CCD; MPP; Metachrome® II UV enhancement (optional)
CCD format	2048 x 2072 imaging pixels plus 22/26 serial pre/postscan pixels and 4 premask parallel pixels; 14 x 14-µm pixels; 100% fill factor; 28.67 x 29.00-mm imaging area (optically centered)
Grade	Grade 1: ≤30 blemishes and 0 column defects for central region (1024 x 1036); ≤150 blemishes and 0 column defects for full surface
User gains	Three detection modes or gains; software selectable; high sensitivity, high dynamic range, high SNR
Linear full well	245,000 e <sup>-</sup> @ 1x; 122,000 e <sup>-</sup> @ 2x; 61,000 e <sup>-</sup> @ 4x
Read noise (3/5 MHz)	High signal-to-noise ratio – 47/55 e <sup>-</sup> rms @ 1x; High dynamic range – 27/35 e <sup>-</sup> rms @ 2x; High sensitivity – 20/30 e <sup>-</sup> rms @ 4x
Nonlinearity	≤1.0%
Readout bits/speed	12 bits @ 3 or 5 MHz; software selectable
Parallel shift rate (@ 5 MHz)	90.5 µs/row (readout); 129 µs/row (discard)
Serial discard rate (@ 5 MHz)	100 ns/pixel
Frame readout (@ 5 MHz)	1.072 sec (minimum) per full frame
Dark current	3 e <sup>-</sup> /p/s with liquid cooling (-25°C)
Operating environment	0 to 30°C ambient, 5 to 80% relative humidity noncondensing

Note: Specifications are typical and subject to change.