



The VersArray: 1024 FT and BFT cameras combine megapixel resolution and frame transfer capabilities with front- and back-illuminated CCD platforms. Coupled with low noise readout electronics, the camera is ideal for low-light-level applications that require continuous, 100% duty cycle imaging. The front-illuminated camera is ideal for NIR application because it does not exhibit etaloning, while the back-illuminated camera offers > 90% QE for the best possible signal-to-noise ratio. The dark current is reduced by thermoelectrically cooling the detector. An optional kinetics mode allows camera to achieve fast frame rates by illuminating only a partial area and using the rest of the detector for storage.

Applications: Astronomy, Bose Einstein Condensate, Chemiluminescence

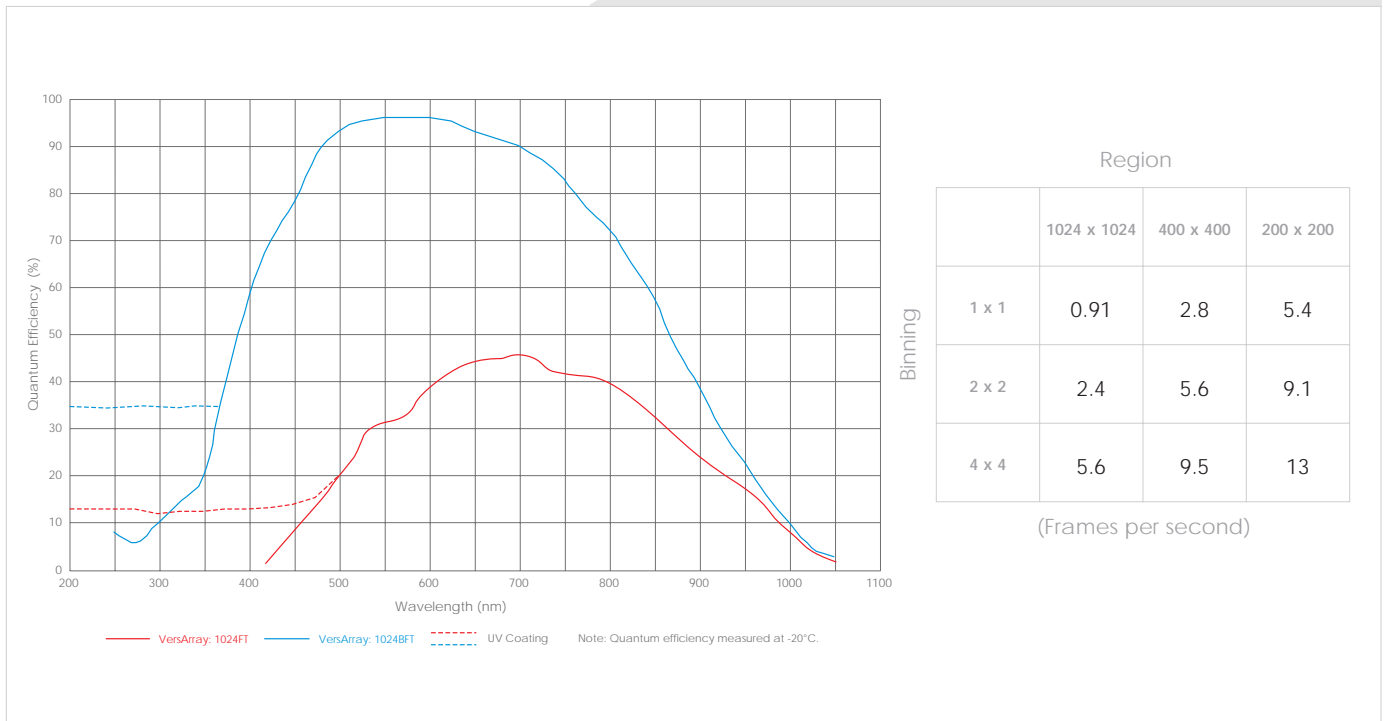
Features	Benefits
1024 x 1024 imaging array 13 x 13- μm pixels	High-resolution, megapixel sensor
Front-illumination Back-illumination	No etaloning; suitable for NIR applications Highest QE (>90%) possible
Frame-transfer readout	Continuous imaging, Shutterless operation
Low-noise readout	Able to measure smaller signals
Flexible binning and readout	Increases light sensitivity while increasing the frame rate
100 kHz/1MHz readout speed	Selectable readout to optimize for low noise or high speed operation
16-bit digitization	Quantifies both bright and dim signals in the same image
Kinetics (optional)	Allows faster frame rates when only partial number of rows are shifted
Thermoelectric cooling	Long integration times for higher sensitivity
C-mount	Easily attaches to standard lenses or optical equipment
USB2.0 PCI interface	Plug-n-play interface for easy setup Works with PC
Fiber optic interface (optional)	For remote operation Available for USB2.0 and PCI
Video output	Compatible with standard video equipment

VersArray: 1024 Specifications

		VersArray 1024FT	VersArray 1024BFT
CCD image sensor		e2v CCD47-20; scientific grade, front-illuminated, frame-transfer CCD	e2v CCD47-20; scientific grade, back-illuminated, frame-transfer CCD
CCD format		1024 x 1024 imaging pixels 13.0 x 13.0 μm pixels; 13.3 x 13.3 mm imaging area (optically centered)	
Grade*		1:<25 dark defects,<2 traps, <2 column defects	1:<100 dark defects,<5 traps, <2 column defects
		Typical	Maximum
Linear full well	single pixel	>60,000 e-	
	2 x 2 binned pixel	>200,000 e-	
Read noise	1-MHz digitization	8 e- rms	10 e- rms
	100-kHz digitization	4 e- rms	5 e- rms
Dark Current	-40°C	<10 e-/p/s	
Nonlinearity		<2%	
Readout bits/speed		16 bits @ 1 MHz; 16 bits @ 100 kHz	
Frame readout		1.1 seconds for full frame @ 1 MHz	
Vertical shift speed		15.2 usec/row (variable)	
Operating environment		0 to 30°C ambient, 0 to 50% relative humidity noncondensing	

*Based on CCD manufacturer's cosmetic blemish definitions
All specifications subject to change without notice

Quantum Efficiency Curve



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