

VersArray 1024



The VersArray: 1024 camera combines mega-pixel resolution and frame transfer capabilities with front and back illuminated CCD platforms. Coupled with low noise read out 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 as storage area.

Applications: Astronomy, Bose Einstein Condensate, Chemiluminescence

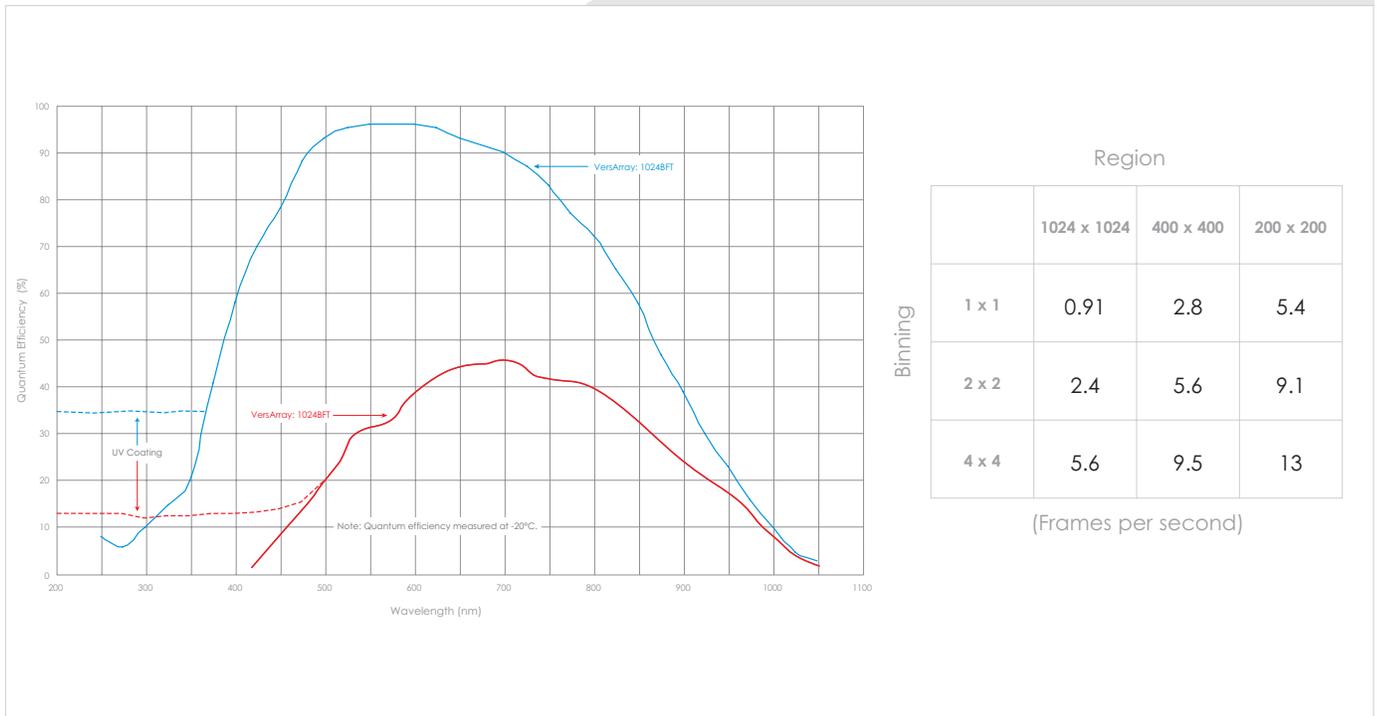
Features	Benefits	
	VersArray 1024FT	VersArray 1024BFT
1024 x 1024 imaging array 13 x 13-μm pixels	High-resolution, megapixel sensor	
Front/Back illumination	Front illumination No etaloning; suitable for NIR applications	Back illumination Highest QE (>90%) possible
Frame-transfer readout	Continuous imaging (1024 FT), Fast image readout (1024 BFT), 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	Plug-n-play interface for easy setup	
PCI interface	Works with PC or Macintosh	
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- μ m 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	
		Minimum	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	
	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

VersArray 1024 Quantum Efficiency Curves



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