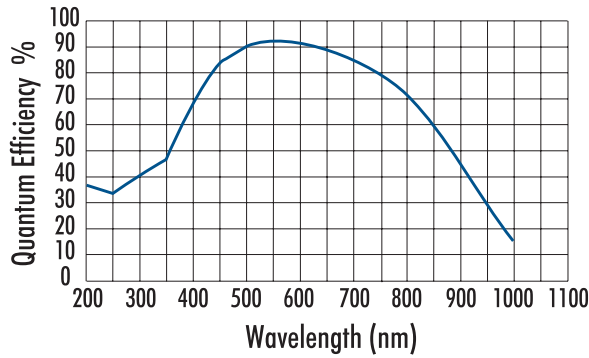




D A T A S H E E T

V E R S A R R A Y S Y S T E M



VersArray:1300B
 Princeton Instruments
 1340 x 1300 imaging array
 20 x 20- μ m pixels

The Princeton Instruments VersArray:1300B is a high-performance, full-frame digital camera system that utilizes a back-illuminated device offered exclusively by Roper Scientific®. With a 1340 x 1300 imaging array, 100% fill factor, and 20 x 20-micron pixels, this system provides a very large imaging area with very high spatial resolution. Dark current is reduced through a thermoelectrically cooled option for easy maintenance or a liquid-nitrogen-cooled option for long exposures. The large field of view, exceptionally high quantum efficiency, low readout noise, and low binning noise make this camera ideal for a variety of low-light imaging applications, including macro-imaging of chemiluminescence.

F E A T U R E S

B E N E F I T S

1340 x 1300 imaging array 20 x 20- μ m pixels	Provides highest resolution available in a large-format, back-illuminated camera
Back-illuminated CCD	Offers the highest sensitivity from the ultraviolet to the near infrared
Scientific-grade CCD	Low noise, few defects, linear response
Flexible, user-selectable binning and subarray readout	Increases frame rate and signal-to-noise ratio (SNR)
High intrascenic dynamic range	Quantifies both strong and weak signals in the same image
Dual-digitizer option	Slow speed for low noise and highest SNR High speed for rapid image acquisition
Thermoelectric or liquid nitrogen cooling	Allows you to match cooling to your application Significantly reduces dark current for long integration times
PCI interface	Industry standard Fast, reliable data transfer
WinView and PVCAM®	Offers easy-yet-sophisticated Windows® GUI controls Automates data acquisition, analysis, and display





D A T A S H E E T

M E T R I C S Y S T E M S A R R A S S E R V I C E S

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

CCD image sensor	Marconi CCD36-40; scientific grade; MPP; back-illuminated; available with UV-enhancement coating				
CCD format	1340 x 1300 imaging pixels; 20 x 20- μ m pixels; 100% fill factor; 26.8 x 26.0-mm imaging area (optically centered)				
Grade	Grade 1				
	Minimum		Typical		Maximum
CCD read noise			2 e ⁻		
System read noise			low noise	high capacity	low noise high capacity
@ 50 kHz			2.8 e ⁻	6 e ⁻	4 e ⁻ 8 e ⁻
@ 100 kHz			3 e ⁻	10 e ⁻	5 e ⁻ 12 e ⁻
@ 1 MHz			10 e ⁻	18 e ⁻	12 e ⁻ 20 e ⁻
Single-pixel full well	200 ke ⁻		300 ke ⁻		
Output amplifier	low noise	high capacity	low noise	high capacity	
	200 ke ⁻	650 ke ⁻	250 ke ⁻	800 ke ⁻	
Dark current	@ -40°C		0.1 e ⁻ /p/s		0.3 e ⁻ /p/s
	@ -110°C		0.5 e ⁻ /p/hr		1 e ⁻ /p/hr
Operating temperature					
TE cooling (air)		-35°C		-40°C	
TE cooling (chilled liquid)		-45°C		-55°C	
LN cooling (liquid nitrogen)		-80°C		-110°C	
Outputs	Low-noise (high-sensitivity) or high-capacity amplifier; user selectable*				
Software-selectable gains	1/2x, 1x, 2x (low-noise mode); 1x, 2x, 4x (high-capacity mode)				
Nonlinearity @ 100 kHz	<2%				
Dynamic range	16 bits				
Scan rates	"100 kHz / 1 MHz" or "50 kHz / 1 MHz"				
Frame readouts	@ 1 MHz	< 1.8 seconds for full frame			
	@ 100 kHz	< 18 seconds for full frame			
	@ 50 kHz	< 36 seconds for full frame			
Thermostating precision	±0.05°C over entire temperature range				
LN hold time	>25 hours				

*Thermoelectric head only.

Note: Specifications are subject to change.



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VersArray:1300B Rev C0