

PIXIS 1024 CCD CAMERA

KEY FEATURES

- 1024 x 1024 format sensor for spectroscopy
- Balanced 13 μm pixels to maximize sensitivity
- eXcelon® technology for sensitivity across UV and NIR
- Thermoelectric cooling down to -75 °C for low dark current
- Acquisition rates of up to 2 MHz
- Permanent vacuum seal
- Dual amplifiers with software-selectable gains
- Optional UV phosphor coatings
- Optional AR coating and wedge windows are available

TYPICAL APPLICATIONS

- Semiconductor failure analysis
- Solar cell inspection
- Astronomy
- Photometry
- Laser Beam Profiling
- Luminescence and chemiluminescence
- Fluorescence imaging
- Bose-Einstein condensate imaging

RELIABILITY

- One-year warranty
- Lifetime vacuum guarantee

High-Performance, Low-Noise CCDs

The PIXIS camera family are fully integrated, low noise CCD cameras with deep cooling for quantitative scientific imaging and spectroscopy applications from UV to NIR. High quantum efficiency and ultra-low-noise electronics make PIXIS cameras highly sensitive and ideal for demanding low-light applications.

This model is the PIXIS 1024 CCD, featuring a 1024 x 1024 sensor format and balanced 13 μm pixels, optimized for high spatial resolution and sensitive imaging or spectroscopy research. The PIXIS 1024 offers thermoelectric cooling down to -90 °C, an all-metal hermetically sealed design (with life-time vacuum guarantee), and exclusive eXcelon® technology for increased sensitivity from UV to NIR with reduced etaloning.



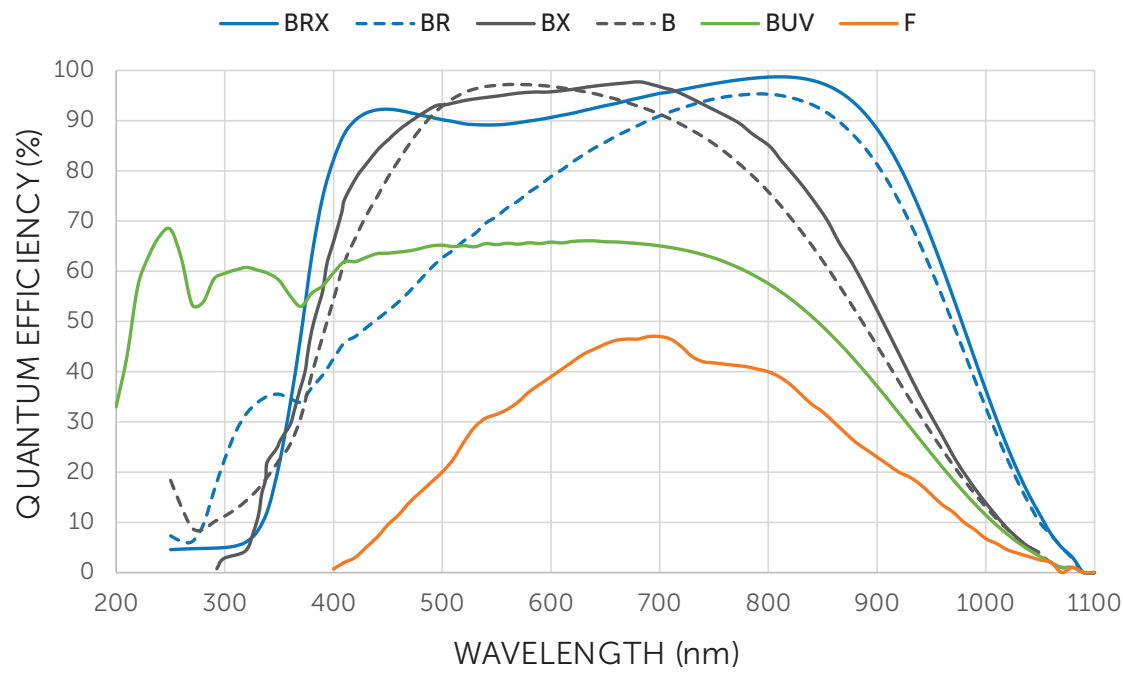
PIXIS 1024 SPECIFICATIONS

SPECIFICATIONS	PIXIS 100	PIXIS 400
CCD Sensor Format	B: Back-illuminated (highest QE in visible, subject to NIR etaloning, optional UV coating) BX: Back-illuminated, with eXcelon (high QE from UV-NIR with low etaloning) BRX: Back-illuminated, deep-depleted with eXcelon (highest QE from UV-NIR with negligible etaloning) BUV: Back-illuminated (highest sensitivity in UV, subject to NIR etaloning) F: Front-illuminated (moderate QE, no etaloning, optional UV coating)	
Active Array Size	1024 x 1024 pixels (1.05 megapixel)	
Pixel Area	13 μm x 13 μm (169 μm^2)	
Sensor Area	13.3 mm x 13.3 mm (18.8 mm diagonal, optically centered)	
Spectral Response	120 – 1100 nm	
Spectrometric Well Capacity	100,000 e ⁻ (single pixel); 250,000 e ⁻ (output node)	
ADC Rates	2 MHz, 100 kHz	
Analog Gain (typical)	1, 2, 4 e ⁻ /ADU (available at all ADC rates)	
Non-linearity	< 1.0% @ 100 kHz	
I/O Signals	Two MCX connectors for programmable frame readout, shutter, trigger in	
Typical System Readout Noise (RMS)	3.0 e ⁻ @ 100 kHz; 9.0 e ⁻ @ 2 MHz	
Typical Dark Current	BRX/BR: 0.02 e ⁻ /p/s @ -60 °C BX/B/BUV: 0.0004 e ⁻ /p/s @ -60 °C F: 0.0002 e ⁻ /p/s @ -60 °C	
Cooling Options	Thermoelectric air or liquid cooling (optional coolant circulator available) -70 °C	
Thermostating Precision	± 0.05 °C across temperature range	
Vertical Shift Times	< 3.2 to 18 μsec /row (programmable)	
Output Interface	USB 2.0 (5m cable provided), optional fiberoptic interface available for remote operation	
Digitization	16-bit	
Operating Temperature Range	5 °C to 30 °C (non-condensing)	
Camera Weight	5.5 lbs, 2.5 kg	
Camera Dimensions	165.9 x 118.1 x 114 mm (L x W x H)	
Certification	CE	
Lens Mount	Adjustable C-Mount with integral 25 mm shutter, spectrometer adapter available	

PIXIS 1024 FRAME RATES

BINNING	2 MHz	100 MHz
1 x 1	1.72	0.1
2 x 2	90 spectra/sec	0.36
8 x 8	7.14	1.18

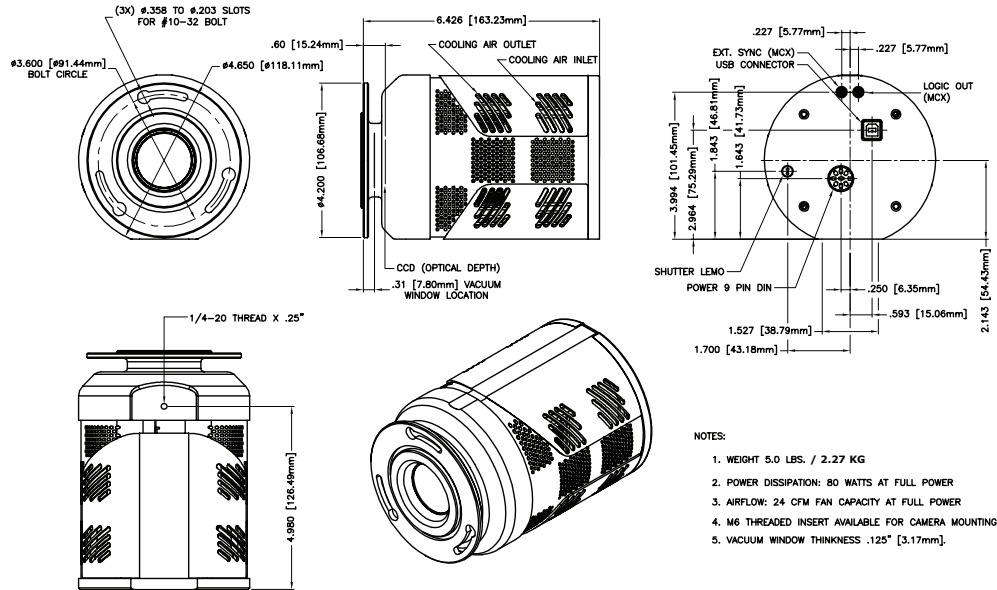
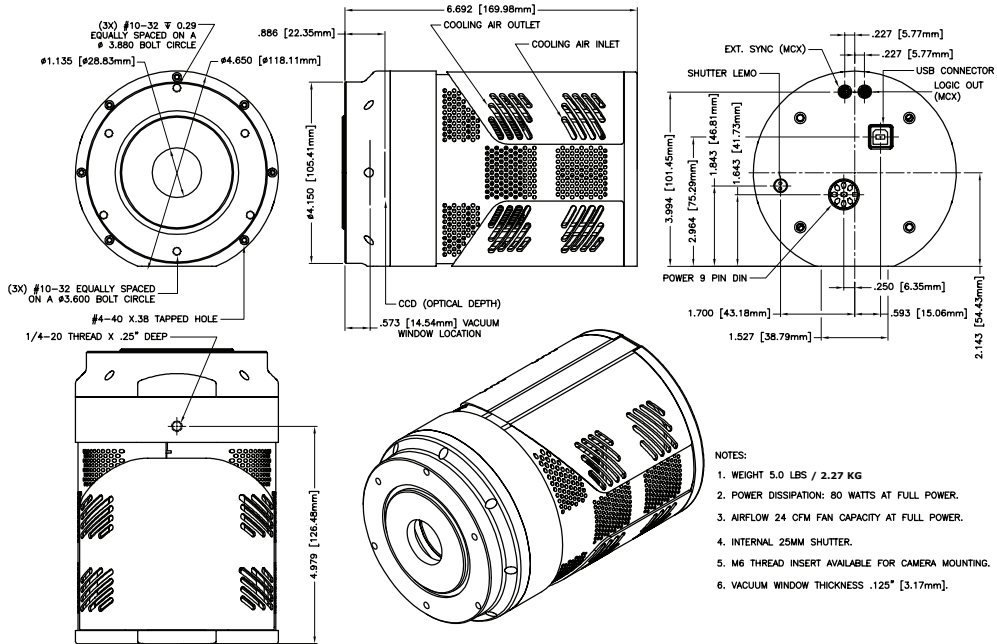
PIXIS 1024 QE CURVES



Enhanced UV version available upon special request

PIXIS 2K ACCESSORIES

Accessories (Air Cooled)	Accessories (Liquid Cooled)	Accessories (Optional)
MCX to BNC cables (x2)	MCX to BNC cables (x2)	WinX application software
USB 2.0 interface cable	USB 2.0 interface cable	LightField® application software
Certificate of Performance	Certificate of Performance	SITK™ for LabVIEW
Power supply (120V/240V)/cables	Power supply (120V/240V)/cables	Internal 25 mm or 45 mm shutter
	Liquid circulator with hoses	Fiber optic extender kit

PIXIS 1024 DIMENSIONAL OUTLINES – AIR COOLED (UNITS: INCHES [MM])

PIXIS 1024 DIMENSIONAL OUTLINES – AIR COOLED (UNITS: INCHES [MM])

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Specifications in this datasheet are subject to change.
 Refer to the Teledyne Princeton Instruments website for most current specifications.

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Revision Date: 2025 04 28