...SEE the Future

Princeton Instruments ACTON

PIXIS:256E

1024 x 256 CCD array | 26 x 26-µm pixels

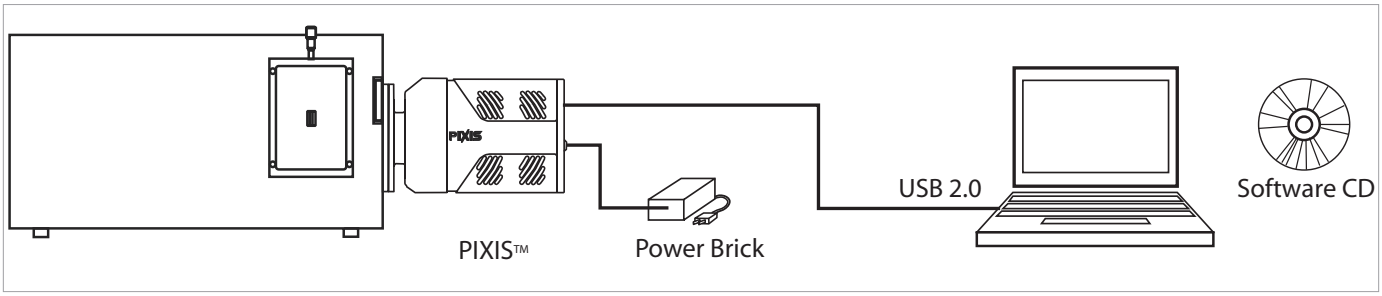
The Princeton Instruments PIXIS:256E is a fully integrated system with permanent vacuum / deep cooling. It uses a high-performance, front-illuminated, spectroscopic-format CCD designed exclusively with an openelectrode architecture to enhance QE. These devices are thermoelectrically cooled (air) down to -75°C to provide the lowest dark charge. The 1024 x 256 array with 6.7-mm chip height and 26-mm spectral coverage is ideal for multistripe spectroscopy and maximum light collecting area. This detector provides excellent response from the vacuum UV to the NIR. The high system reliability is ideal for OEM and laboratory applications.

Applications: multistripe Raman, LIBS, multistripe absorbance, emission, reflectance

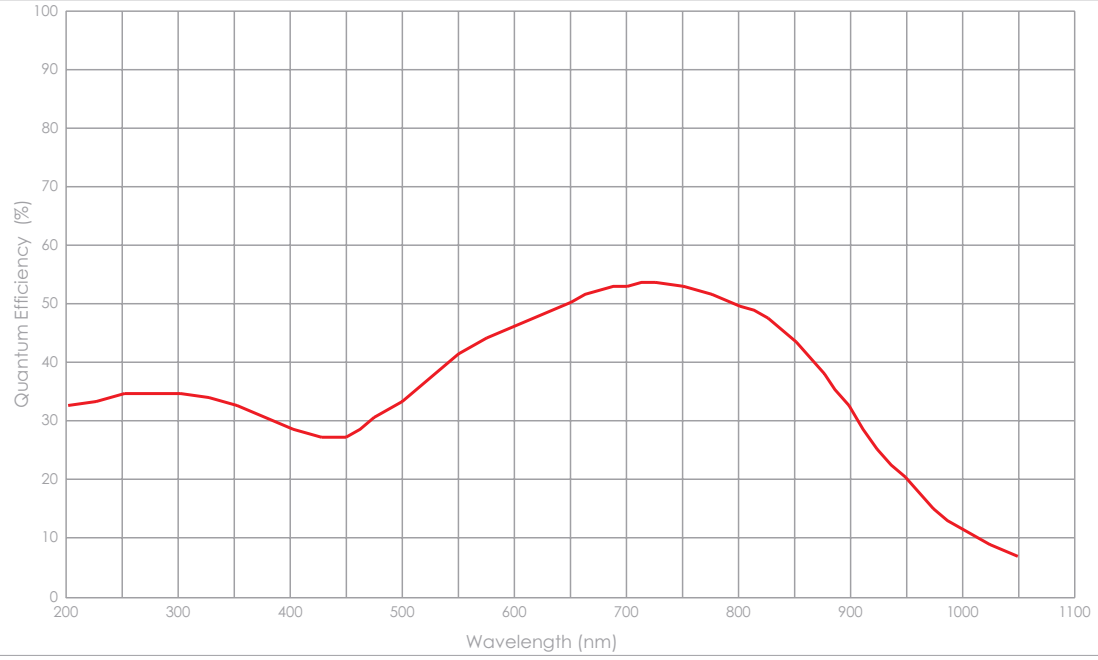
Features	Benefits
Permanent vacuum	Guaranteed temperature performance and worry free operation with all metal seals
Deep thermoelectric cooling / air	Operate without the need for circulating liquid or an additional power supply
Compact design	Complete system integrated into a small footprint Ideal for integration into applications where space is at a premium
Exclusive CCD architechture	Provides industry's lowest-noise CCD system
1024 x 256 CCD array	Exclusive format provides superior resolution over industry-standard "1024 pixel" format
6.7-mm chip height	Ideal for rapid spectral acquisition
Front-illuminated CCD	High performance without etaloning
Dual-digitizer option	Multiple-speed digitization allows complete freedom to select between "slow operation" for low noise and highest SNR or "fast operation" for rapid spectral acquisition
Single optical window	No losses due to multiple optical surfaces
Standard spectrometer mount	Easily interfaces with most spectrometers
TTL input and output	External trigger input with programmable polarity TTL output with exposure or readout monitor
USB 2.0 interface	Seamless, plug-n-play connection to PC notebooks and desktops, no need for external control box or installing PCI cards Easy OEM integration
Renowned WinSpec software	Offers easy-yet-sophisticated Windows® GUI controls Automates data acquisition, analysis and display
PICAM® for VB, C, C++ and Scientific Imaging Toolkit for LabVIEW™	Respected application program interface provides a universal interface to all Princeton Instruments/Acton hardware

PIXIS:256 Specifications

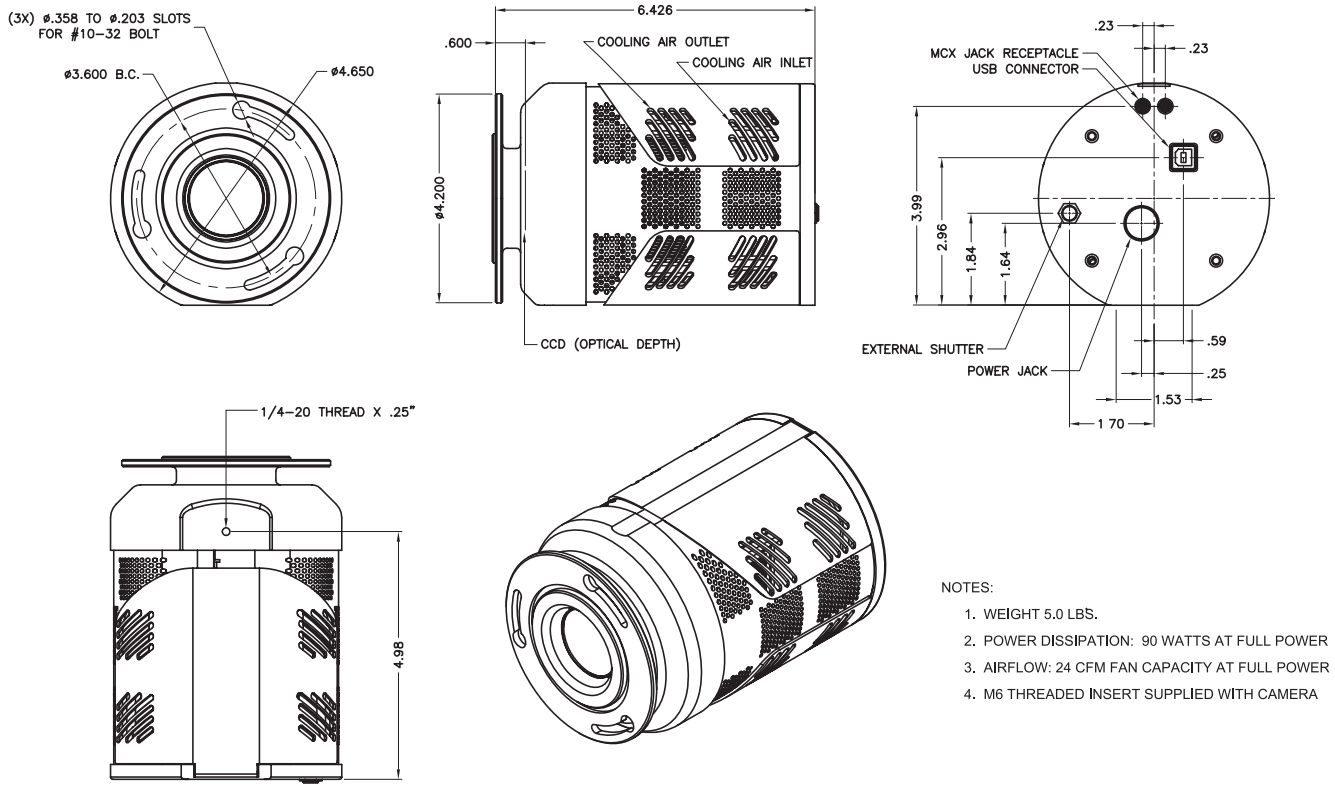
	PIXIS:256E		
CCD Image Sensor	e2v CCD 30-11; scientific grade 1; MPP; front-illuminated, open-electrode device		
CCD format	1024 x 256, 26 x 26 µm pixels, 26.6 x 6.7 mm imaging area		
	Typical	**Maximum**	
Dark Current @ -75°C	0.001 e/p/s	0.02 e/p/s	
System Read Noise **@ 100 kHz readout** **@ 2 MHz readout**	 6 e-rms 22 e-rms	 8 e-rms 28 e-rms	
Vertical shift rate	30 µsec/row		
Spectral rate **@ 100 kHz** **@ 2 MHz**	 35 spectra/sec 85 spectra/sec		
	Minimum	**Typical**	
Spectrometric Well Capacity **Single pixel** **Binned**	 200 ke- 500 ke-	 300 ke- 800 ke-	
Deepest Cooling Temperature	-70°C	-75°C	
Thermostat Precision	±0.05°C across entire temperature range		
Software-selectable gains **High Sensitivity**	High 3 e-/ct	Mid 6 e-/ct	High 12 e-/ct
Dynamic Range	16 bits		
Nonlinearity **@ 100 kHz readout** **@ 2 MHz readout**	 < 1% < 2%		



QE Curve



PIXIS:256 Drawing



NOTES:

1. WEIGHT 5.0 LBS.
2. POWER DISSIPATION: 90 WATTS AT FULL POWER
3. AIRFLOW: 24 CFM FAN CAPACITY AT FULL POWER
4. M6 THREADED INSERT SUPPLIED WITH CAMERA

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