



PIXIS



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Princeton Instruments, the foremost innovator in CCD camera technology has teamed up with Acton Research Corporation, the world's leading designer of spectroscopic instrumentation, to present the PIXIS.

PIXIS™, the most affordable, advanced detection system in the world!

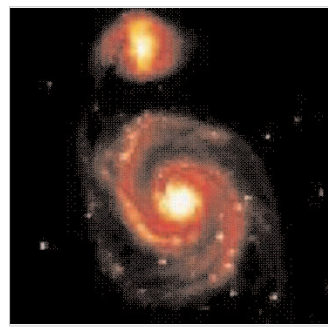
PIXIS is a no-compromise, next-generation camera platform engineered for low-light-level spectroscopy and imaging. Whether your application involves Raman spectroscopy in the near infrared or semiconductor imaging in the ultraviolet, PIXIS has everything you need to tackle the most demanding applications.

Never before have so many state-of-the-art features been incorporated in a single camera design. Simply put, no other camera in the world can match PIXIS for performance and value. The new platform is offered with a full range of imaging and spectroscopy CCDs, including Princeton Instruments' exclusive 1340 x 100 and 1340 x 400 format devices.

Features	Benefits
Permanent vacuum	Guaranteed temperature performance and worry free operation with all metal seals.
Deep thermoelectric cooling	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 architecture	Provides industry's lowest-noise CCD system
Software-selectable amplifiers	Exclusive feature provides choice of superior sensitivity or superior SNR
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
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
Renowned WinSpec software	Offers easy, yet sophisticated Windows® GUI controls Automates data acquisition, analysis and display
PICAM® for VB, C, C++ and Scientific Toolkit for LabVIEW™	Respected application program interface provides a universal interface to all Princeton Instruments hardware



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The PIXIS is a revolutionary, compact single head design, offering a state-of-the-art modular metal-seal vacuum design. The camera features permanent vacuum, -80°C cooling, read noise as low as 2.5 e-rms and USB 2.0 interface. The seals are guaranteed for the life of the camera. In tradition with the PI Acton's approach, PIXIS is offered with a full range of spectroscopy and imaging CCDs, including proprietary 1340x100 and 1340x400 format devices in front, back illuminated and deep depletion versions. Operated at 100 kHz and 2 MHz, each camera delivers greater than 16-bit true dynamic range. An easy-to-use USB 2.0 interface allows the camera to be run from portable laptop computers. Full triggering and shutter control capabilities are provided. PIXIS cameras are available with the renowned WinView/WinSpec software suites featuring powerful data acquisition capabilities. Macro record feature quickly and easily automates complex experiments. The new cameras are backward compatible with all the software packages and custom programs written for previous cameras from Princeton Instruments.

Permanent vacuum with all-metal seals.

PIXIS is the only scientific CCD camera in the world to provide guaranteed vacuum performance, cooling temperature AND the dark current for the entire lifetime of the instrument.

Exclusive Princeton Instruments vacuum technology features 100% UHV-grade components in a stainless-steel vacuum chamber hermetically sealed with all-metal seals. Leading-edge brazing techniques are used for the optical-window / vacuum-chamber interface.



Deepest thermoelectric air cooling.

Thanks to our renowned XP cooling technology, PIXIS cameras offer the lowest dark current and the greatest convenience. Deep cooling as low as -80°C is achieved using only air. To keep dark current stable, cooling is controlled to within ±0.05°C.

Say farewell to complicated, bulky chilled-water circulators in your lab!

High speed, USB 2.0 interface. Seamless plug-and-play interface...

PIXIS offers a high-speed USB 2.0 interface for seamless connectivity with desktops and laptops. Opening your computer to insert a PCI card is a thing of the past! And don't be fooled by the "claims" of USB2.0 with readout speed restrictions, the PIXIS gives you true 16-bit data at 2MHz readout speed. For example, achieving greater than 500 spectra/sec is just a part of the standard operation for PIXIS (ofcourse "custom" readout modes push this way beyond!). Convenience and Performance. No compromises!

Compact design. One camera head. No more external boxes or controllers.

Unrivaled, state-of-the-art PIXIS technology comes in a single, compact (6.5" x 4.65" diameter) package. The system's low-noise electronics and analog-to-digital converters are located close to the CCD, right inside the camera head. This use of Primary Point Digitization™ helps PIXIS achieve the lowest read noise (unlike systems that house crucial readout electronics on PCI cards situated in noise-prone environments such as computers). Every bit of care goes into the selection of components as much as the electronic design. As a result, PIXIS achieves

extraordinarily low read noise, even while running at the highest readout speeds.

Dual-amplifier configuration and independent gain settings.

Our exclusive dual-amplifier configuration (high capacity or low noise) enables PIXIS to be used for high-light-level absorbance or low-light-level Raman applications. Six independent gain settings (e-/ADU) let you fine-tune the camera.

For imaging applications, the PIXIS platform supports 1024 x 1024 and 512 x 512 format devices with front- and back-illuminated technologies. These devices offer low read noise and large full well to provide the best imaging performance. The back-illuminated CCDs are available with a special enhanced-UV process for ultimate ultraviolet sensitivity.

