

The ActiPix D100 UV Imaging Detector

ActiPix D100

Features and Benefits

- Miniature palm sized capillary UV imaging detector enables coupling immediately before any mass spectrometer, opening up new possibilities for simultaneous quantification by UV and structural characterization by MS.
- The ActiPix™ D100 can be used as a single or multiplexed detector using capillaries (size range 20 µm ID to 750 µm ID) as sample cells.
- Multiplexing of capillaries across the 7 x 9 mm active pixel sensor area brings affordable high throughput UV detection to users for the first time.
- Flexible 1 m fibre optic cable enables UV imager enables easy hyphenation.
- Spatial resolution of 70 µm makes it ideal for high speed, high efficiency separations.
- Very low noise characteristics (5 µAU) giving a limit of detection of 30ppb for hydroxybenzoate in a 75 µm ID capillary at 250nm.
- Five orders of magnitude linear dynamic range. This is ideal for impurity profiling of drugs in the pharmaceutical industry.
- Can be used down to 190 nm making it ideal for proteomics.
- In-line nature allows real time monitoring for Process Analytical Technology.

Paraytec's ActiPix™ D100 has been awarded the [Pittcon 2007 Editors' Choice Silver Award for Best New Product](#) at the Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy (Pittcon), USA and [The R & D Magazines' R&D 100 prize for 2007](#)

Contact

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ActiPix D100



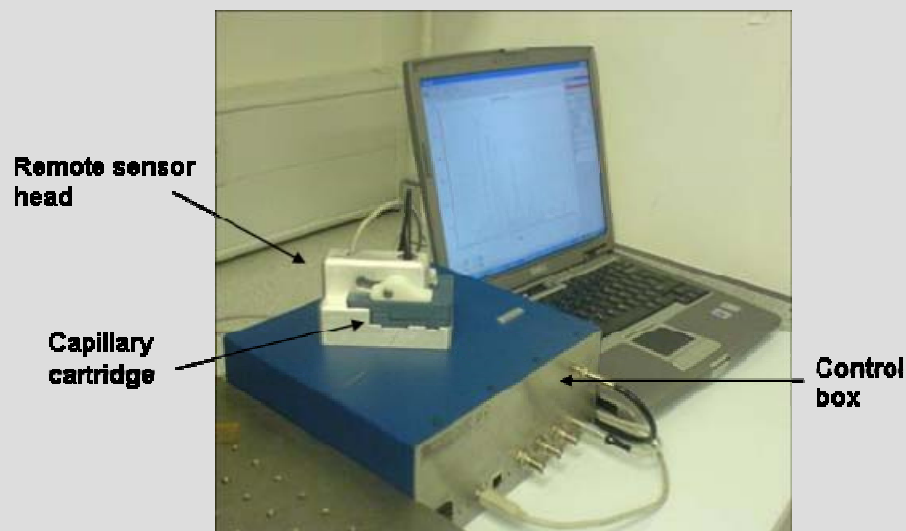
Introducing the ActiPix D100 – the world's first miniature capillary based UV imaging detector. This detector uses novel Active Pixel technology to enable high resolution high sensitivity imaging making it an ideal detector for nano- to microbore LC and CE. This versatile detector can be placed immediately before a MS source, opening up new possibilities for simultaneous quantification by UV and structural characterization by MS.


parallel array technology

The ActiPix D100 UV Imaging Detector

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The ActiPix D100 is the world's first miniature capillary based UV Imaging detector. The detector uses Active Pixel Sensing technology to enable high resolution, high sensitivity imaging making it an ideal detector for nano- to microbore capillary LC and CE. The resulting image is viewed by means of a 9mm long window either directly on the analytical capillary or by joining to a matched capillary.



The ActiPix D100 consists of a control box and a small remote sensor head containing a capillary cartridge. The remote head can be positioned exactly where required simply by clipping it on to the analytical capillary. Its small size (6 cm x 11 cm x 6.5 cm) means that it is ideal for in-line detection with any MS source.

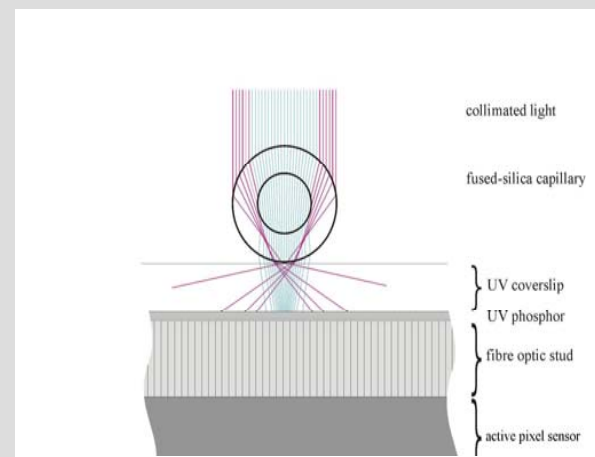
Brief Description of Technology

Unique Self-referencing System



- Uses a **capillary** as combined sample vessel and lens
- Allows minute volumes to be measured: **nanolitres to picolitres**
- **Highly sensitive** over **five orders of magnitude** linear dynamic range
- **Unique signal referencing system** using CMOS Active Pixel Sensor
- **Miniature instruments**
- Simultaneous measurement of multiple capillaries allows **extremely high throughput**

Patented Active Pixel Sensing with Fused Silica Capillaries

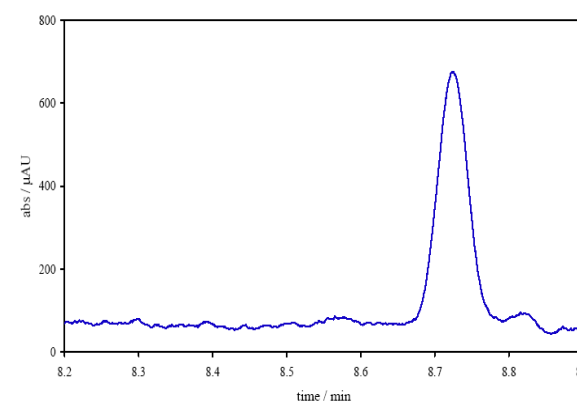


Light is delivered via a fibre optic cable coupled to a xenon flash lamp. Readout of signal on the active pixel sensor and the absorbance calculations are carried out at MHz rates. All processing is done on hardware and custom electronic assemblies. Process data is output in real time to a PC using industry standard high speed serial data link.

Product Specification

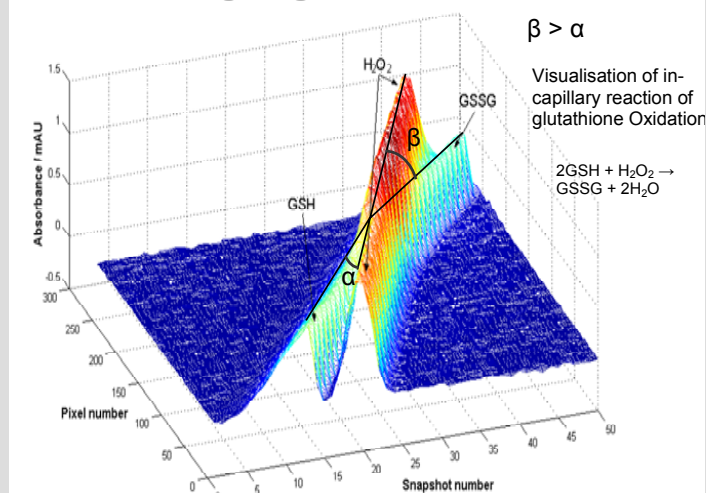
| | |
|---------------------------------|---|
| Wavelengths | Single wavelength filters selectable in range 190 – 1100 nm |
| Bandpass | 10 nm |
| Baseline noise in absorbance | 5 μ AU (1 sec time constant) |
| Linear dynamic range | 5 orders of magnitude: 5 μ AU – 0.5AU |
| Peptide limit of quantification | 100 ng ml ⁻¹ (190nm) |
| Spatial resolution | 70 μ m |
| Tolerance for eluents | Useable with all standard eluents (methanol with 1M acetic acid etc) over full range down to 190 nm |
| Sensor | CMOS Active Pixel Sensor |
| Size of detector | Approx. 6x11x6.5cm |

Low Noise

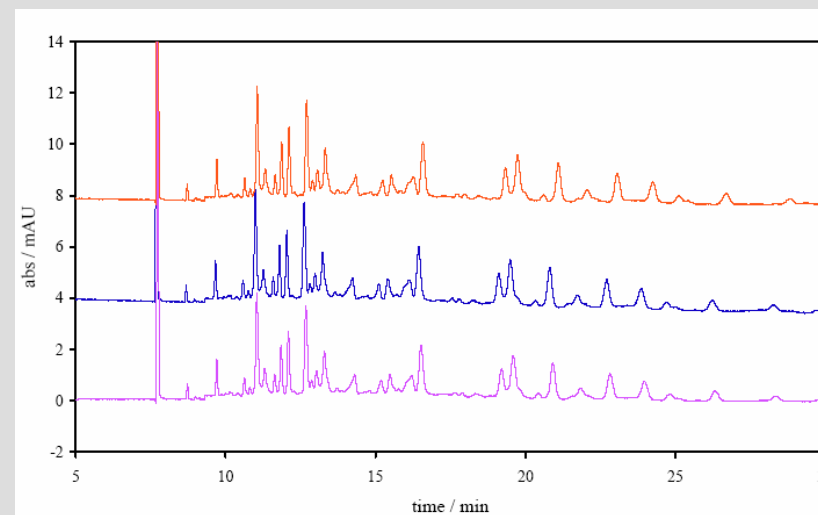


Noise: 7 μ AU with 0.5s time constant
Peak efficiency 2×10^5

UV Imaging



Detection in Multiple Capillaries



Simultaneous electropherograms from a 3-capillary array for α -lactalbumin tryptic digest.

Excellent Linearity

