PicoVIEW®
NANOSPRAY SOURCES

DIGITAL
PicoVIEW®
NANOSPRAY SOURCES

NEW OBJECTIVE

"I just wanted to tell you how impressed I am with the [PicoView] that I recently received. It is wonderfully designed – millions of times nicer than the original source."

Corey Bystrom, Ph.D.

total control

The highest sensitivity and control is achieved with PicoView® nanospray sources. The platform accommodates flow rates from <10 nL/min to 4 µL/min either online or offline.

PICOVIEW®
NANOSPRAY SOURCES

infinite control

Go digital and eliminate the need for manual, trial-and-error adjustment of emitter position and voltage! Digital PicoView® nanospray sources provide unparalleled control and flexibility for the highest performance.

DIGITAL
PICOVIEW®
NANOSPRAY SOURCES

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Benefits

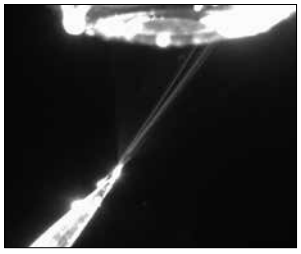
The ultimate performance nanospray source for methods requiring flexibility and control. PicoView® nanospray sources are engineered to provide maximum capabilities for a wide range of challenging applications.

- Magnetic interlock stage plate allows easy emitter removal or adjustment without the use of tools
- Versatile tip-mounting option allows for junction or tip-style high-voltage contact
- Fully compatible with all PicoTip® emitters and PicoFrit® columns
- Imaging system with visual or video imaging lets user see the tip and spray for easy tuning and troubleshooting
- Modular stage plate is user-configurable for multiple applications, with controllable tip angle for optimum signal
- High-precision, ball-bearing XYZ stage for exact positioning
- Universal valve mount for manual or automatic valves positioned close to the emitter to minimize system-wide swept volume

PicoView nanospray sources are designed for scientists by scientists. Standard PicoView models allow full control over all experimental details from tip angle and voltage application methods to online or offline analysis. PicoView affords a simple and effective solution for high performance and high productivity.

The hallmark of the PicoView platform is high-performance nanospray via the novel spray imaging system. Spray visualization and validation translate into high sensitivity, greater reproducibility, and increased productivity.

Droplet formation
Spray voltage too low



Jet Spray
Spray voltage too low

Perfect Plume
Spray voltage is optimal

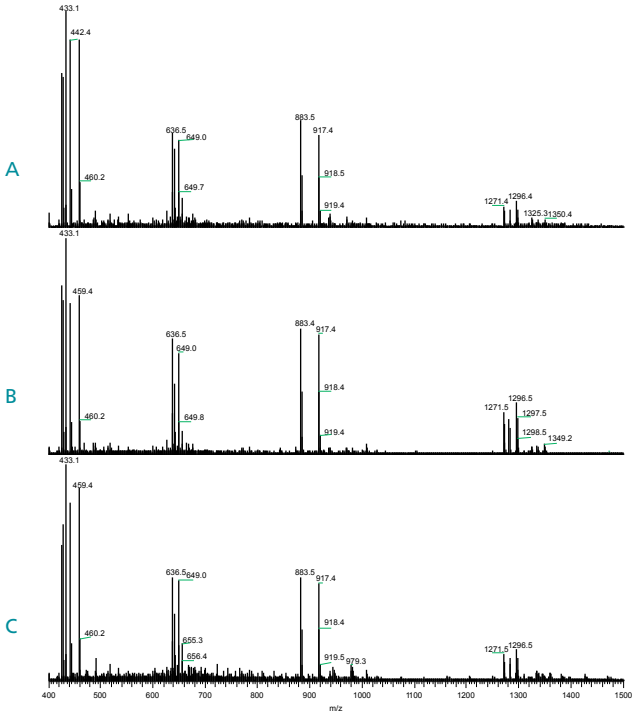
Split-Spray
Spray voltage too high

Visit www.newobjective.com for more information on PicoView sources

Flexibility and Results.

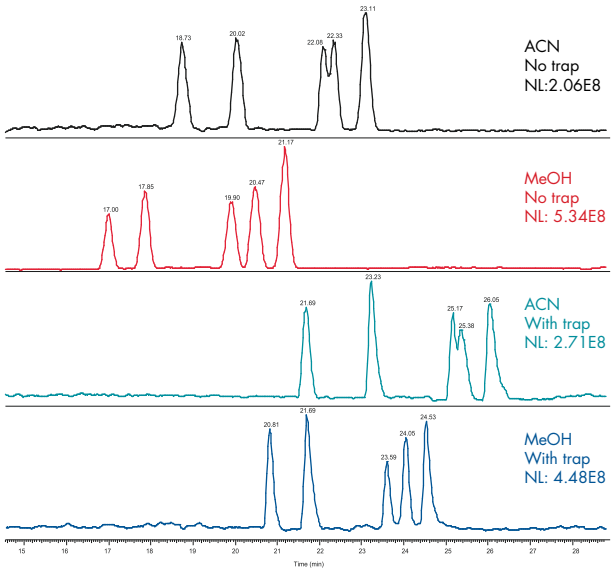
CONCENTRATION-DEPENDENT SENSITIVITY

Flow rate comparison for a 5-peptide mix: A) Spectra for 500 nL/min. constant flow rate; B) Spectra for 50nL/min. constant flow rate; C) Intermediate flow rate.



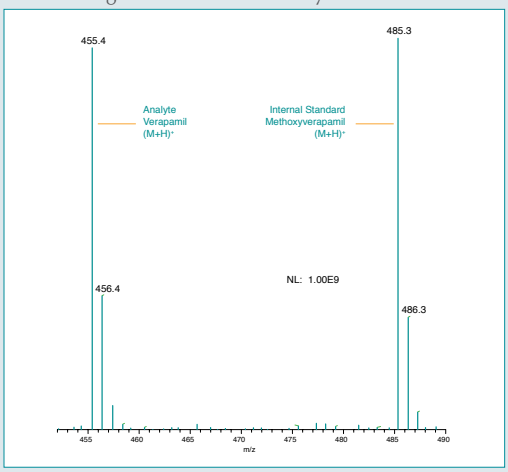
RAPID METHOD DEVELOPMENT: METHANOL vs. ACETONITRILE

For a 5-component angiotensin sample, methanol yielded superior performance with enhanced MS S/N ratios and peak intensities. Below, base peak chromatogram of 5-angiotensin test mixture using a PicoFrit® column containing 10 cm of ProteoPep™ II C18.



SMALL MOLECULE ANALYSIS

Offline analysis of canine plasma-spiked standard comntaining small-molecule analyte.

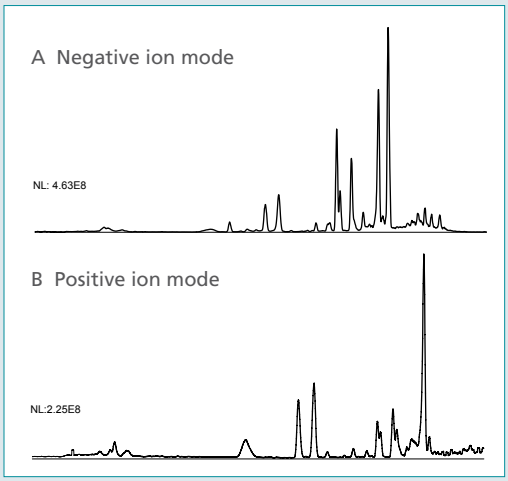


Mass spectrum of verapamil with methoxyverapamil (IS)

MS/MS of verapamil $(M+H)^+$

VARIABLE ION MODE

Base-peak chromatograms of ß-casein digest with PicoFrit columns containing 10 cm of ProteoPep II C18.



PicoVIEW®
NANOSPRAY SOURCES

HIGH-RESOLUTION TIP & SPRAY IMAGING

50x-200x System magnification provides optimal viewing of your emitter on the high-resolution video monitor for easy tuning and troubleshooting. The high-quality video camera is easily positioned and focused with fine-positioning knob-driven controls.

JUNCTION OR TIP CONTACT

Whether you need to establish a high-voltage liquid junction contact with the voltage-ready microtee, or apply voltage to your analyte through the conductive coating on a SilicaTip™, or even need to calibrate your system using offline GlassTips™, PicoView® easily accommodates all styles of voltage application.

TOOL-FREE MAGNETIC STAGE

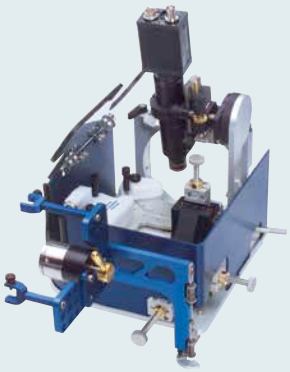
Change emitters or modify your experiment out of the box quickly and easily — no screws or clamps and no tools required. The magnetic interlock stage snaps back into place easily and with minimal re-optimization. With an additional stage, setup a second experiment while the first is running.

MINIMIZE SWEPT VOLUME

PicoView sources provides an integrated valve mount to help keep system swept volume as low as possible. Component arms organize plumbing, trap, and guard columns for quick and efficient setup and modification.

PICOVIEW® MODELS

PV-550
For Thermo Fisher LTQ/FT, Orbitrap, and Deca XP Max



PV-500
For Thermo Fisher LCQ Deca XP and XP Plus

PV-400
For Applied Biosystems QSTAR and ABI 3000

PV-150
For Thermo Fisher LCQ Deca and LCQ Classic

"This [Digital PicoView] is the most stable, robust nanospray set-up I have ever had."

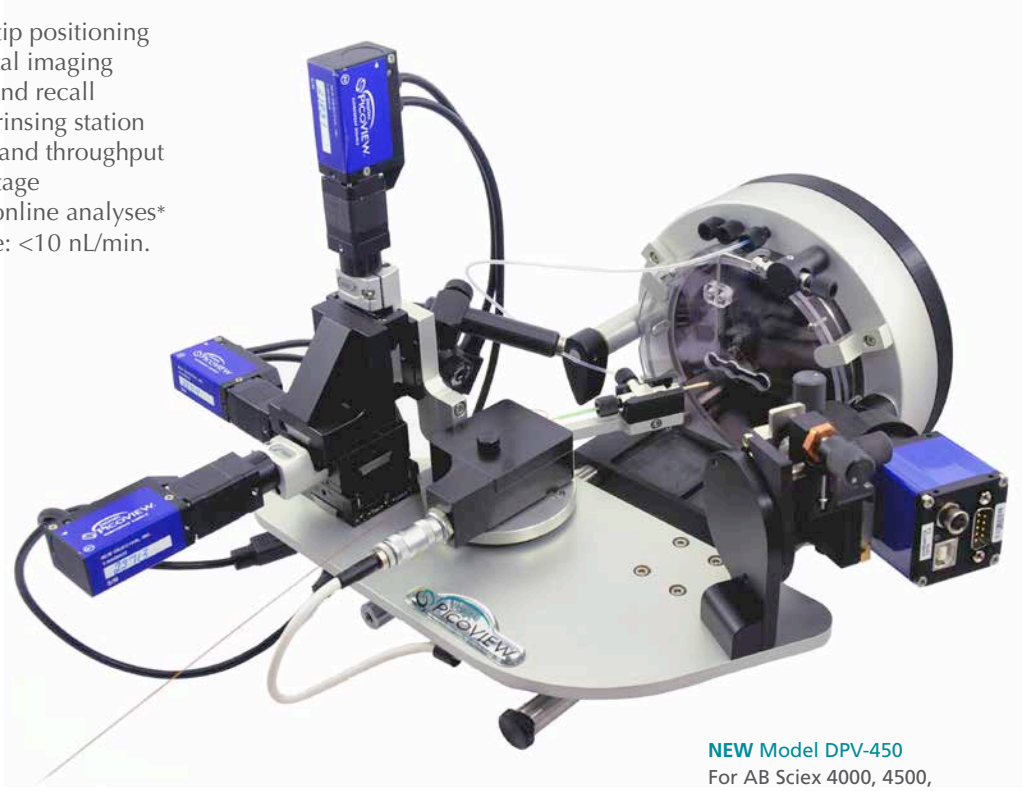
Reid Townsend, Ph.D., M.D.

DIGITAL PICOVIEW®
NANOSPRAY SOURCES

Infinite Control

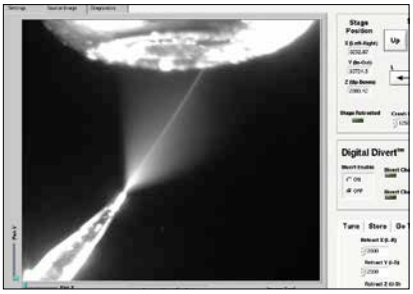
The Digital PicoView® nanospray source provides a new level of high performance. This platform integrates a digitally-controlled tip positioning and rinsing system with the tool-free set up and comprehensive hardware benefits of the PicoView platform.

- Digitally-controlled tip positioning
- High-resolution digital imaging
- Stage position save and recall
- Fully-automated tip rinsing station
- Increased efficiency and throughput
- Tool-free magnetic stage
- Perform offline and online analyses*
- Wide flow-rate range: <10 nL/min. to >10 µL/min.



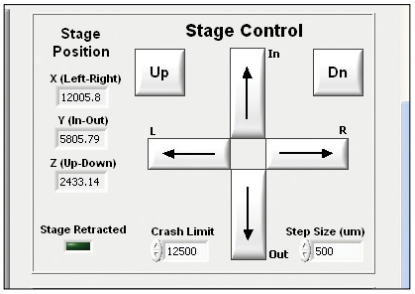
NEW Model DPV-450
For AB Sciex 4000, 4500, 5500, 6500 & 6600 systems

HIGH-RESOLUTION DIGITAL IMAGING



The USB-driven camera provides a high-resolution image directly to the mass spectrometer. This superior digital image is fundamental for spray optimization, method development, and diagnostic troubleshooting. Image above taken on DPV-550.

DIGITAL STAGE POSITIONING



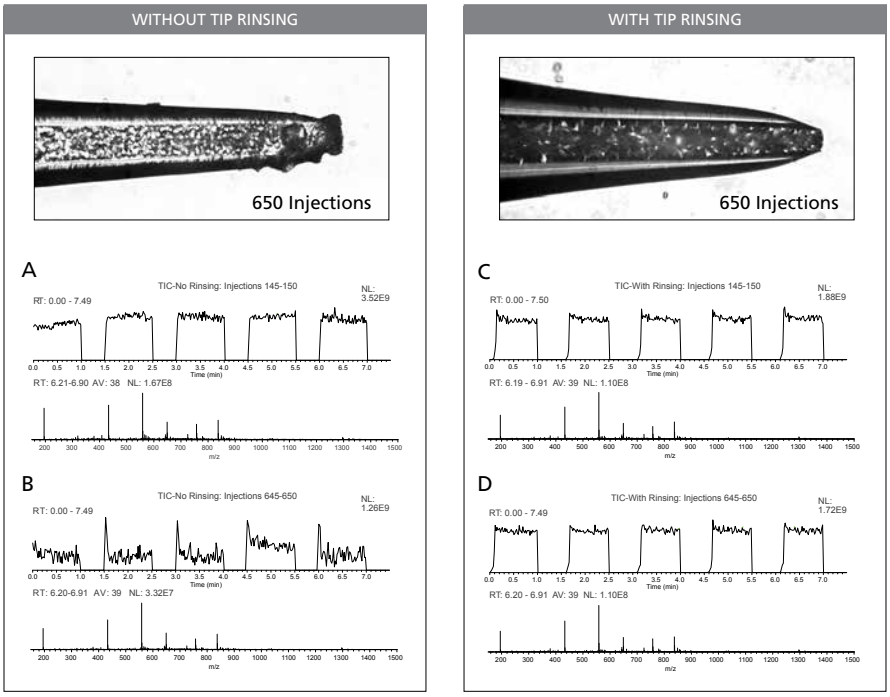
Control stage positioning with the PV Acquire software. The intuitive interface eliminates any concern with the accurate recall of tip position. Precise tip positioning with micrometer accuracy affords the highest possible control for optimal spray delivery. Tip positions are easily saved and recalled to reduce time spent on optimization and boost productivity.

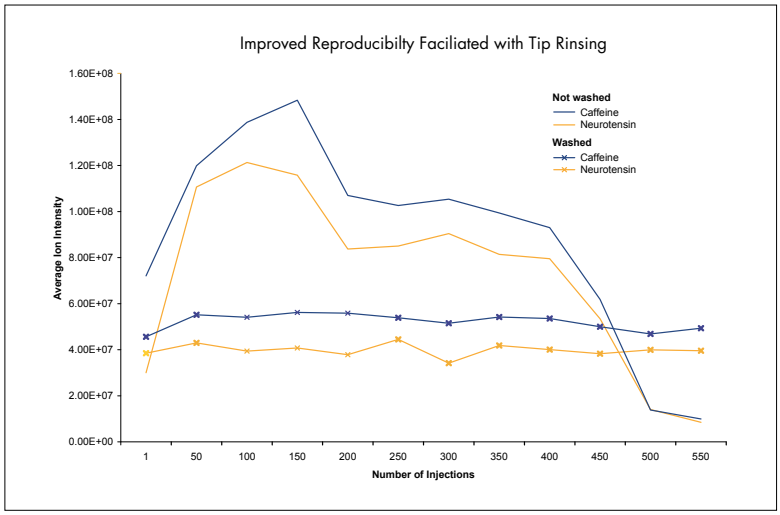
FULLY- AUTOMATED TIP RINSING

Keeping the PicoTip nanospray emitter clean can significantly extend its lifetime and provide high performance results throughout the study. The Digital PicoView nanospray source features a dedicated Rinse Station with Digital Divert to automatically rinse and clean. DPV-550 shown above.

AUTOMATED TIP RINSING

The TICs and summed full-scan spectra shown at right were obtained from a canine-plasma sample spiked with a standard; one with tip washing and without. Injections 145–150 show similar TICs (A and C). After 645 injections, an overall intensity decrease is apparent and the degradation in stability is indicated by the jaggedness of the TIC (B). Contrary to this change in TIC between injections 145 – 150 and 645 – 650 for data collected with no tip washing, Panel D shows the TIC for injections 645 – 650 for data collected with tip washing. The TIC in Panel D is identical to the TIC in Panel C. Regular washing of the emitter exterior has maintained the intensity and stability of the TIC throughout the duration of the experiment while the intensity decreased from injection 150 to injection 650 with no tip washing.

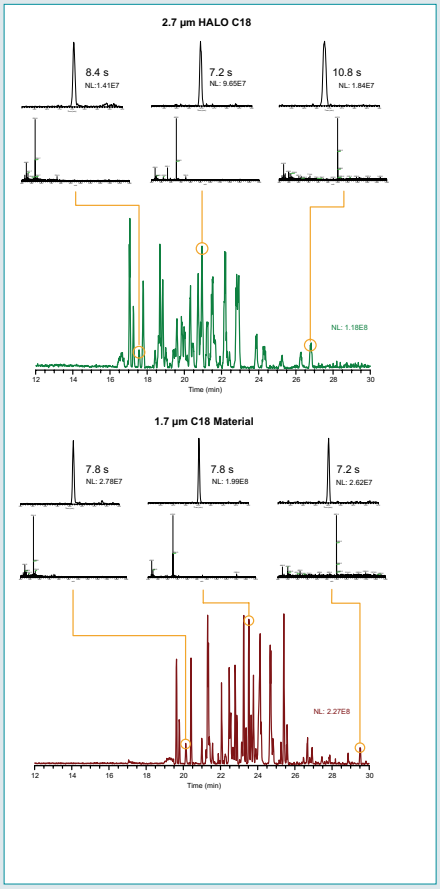




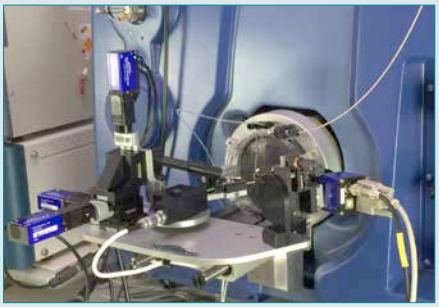
Comparative data plot of Average Intensity per injection for two ions, Neurotensin $MH2^+$ at 837.2 Da and Caffeine MH^+ at 195.2 Da. The change in average intensity for each ion over multiple injections is dramatically different for the data set collected with washing versus the data set collected with no washing. The signal intensity collected with emitter washing is highly reproducible whereas the signal intensity with no emitter washing exhibits dramatic fluctuation. With no emitter rinsing, the decrease in intensity per injection indicates that eventually the value will go to zero.

RAPID METHOD DEVELOPMENT

Rapid method development is facilitated with the PicoView® unique magnetic-stage design. The no-tool interface makes column-switching quick and simple.



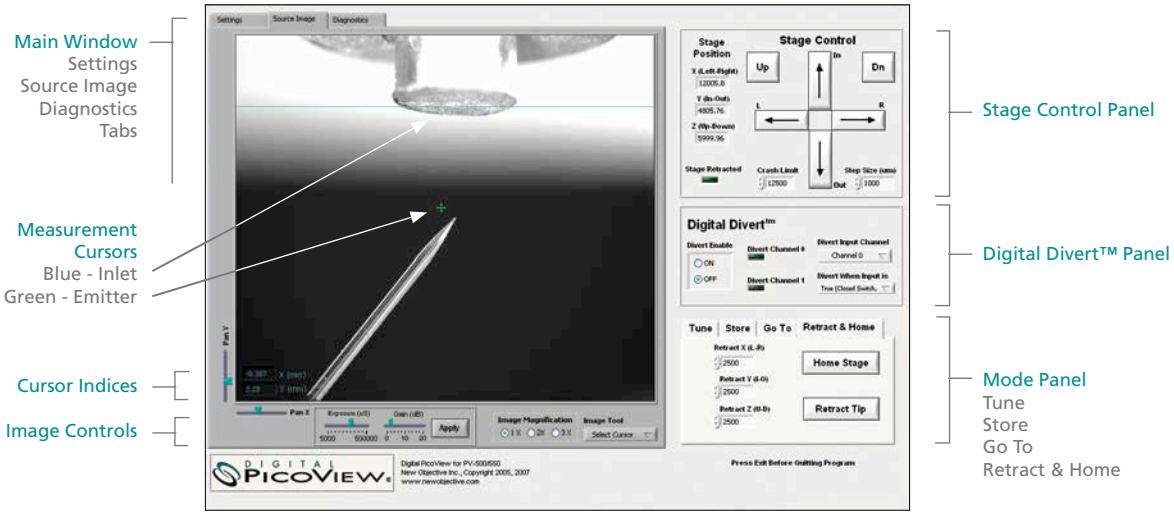
The data above compare two different PicoFrit columns in the analysis of a 100 fmol BSA digest

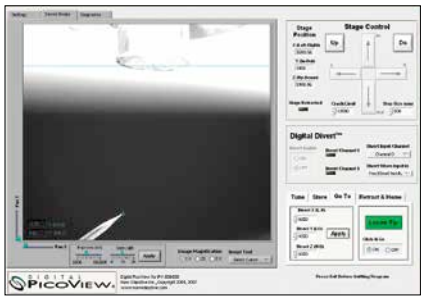


DPV-450 in use on the AB SCIEX 5500 QTrap

Software: PV Acquire™

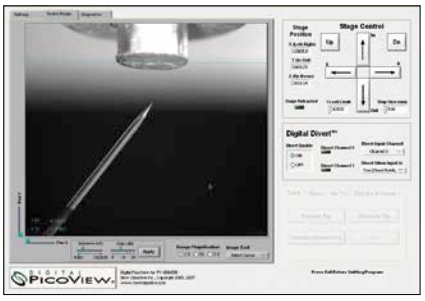
PV Acquire™ is a powerful user interface for Digital PicoView®. The software is controlled by the mass spectrometer and enables rapid spray optimization in concert with the signal output obtained from the mass spectrometer.





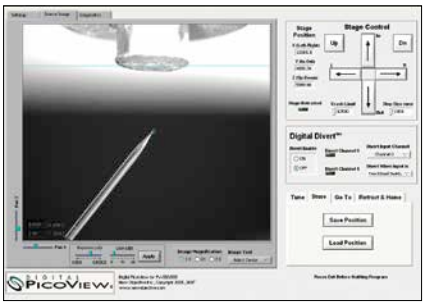
ON-SCREEN POSITIONING

On-screen emitter positioning is a specially designed feature for the Digital PicoView nanospray source and provides an easy way to establish the X and Y coordinates for rapid and accurate tip positioning.



DIGITAL DIVERT™

The Digital Divert function allows the LC or mass spectrometer to control tip repositioning. This feature is essential for the tip rinsing applications and automatically positions the emitter tip away from the inlet in between runs.



STORE & LOAD

Emitter positions can now be saved with a date and time stamp or user-defined file name. Choose from a library of emitter positions from the pop-up menu and the emitter is repositioned to the exact coordinates.

DIGITAL PICOVIEW® MODELS

NEW
DPV-565 (SHOWN)
For Thermo Fisher Fusion® and Quantiva™

DPV-550
For Thermo Fisher LTQ™/FT, Orbitrap™, Velos®, Q Exactive® and Deca XP Max™

NEW
DPV-450
For AB SCIEX 4000 QTrap®, 4500 Triple Quad, 5500 QTrap®, and 5600 TripleTOF®

DPV-400
For AB SCIEX QSTAR® and API 3000

Digital PicoView is manufactured and sold under U.S. Patents 5,572,023, 6,977,372 and 6,744,046. Specifications subject to change without notice.

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