

Get the benefits of Extrel APIMS technology

VeraSpec™ APIMS make the analytical difference through intuitive, low-maintenance operation.

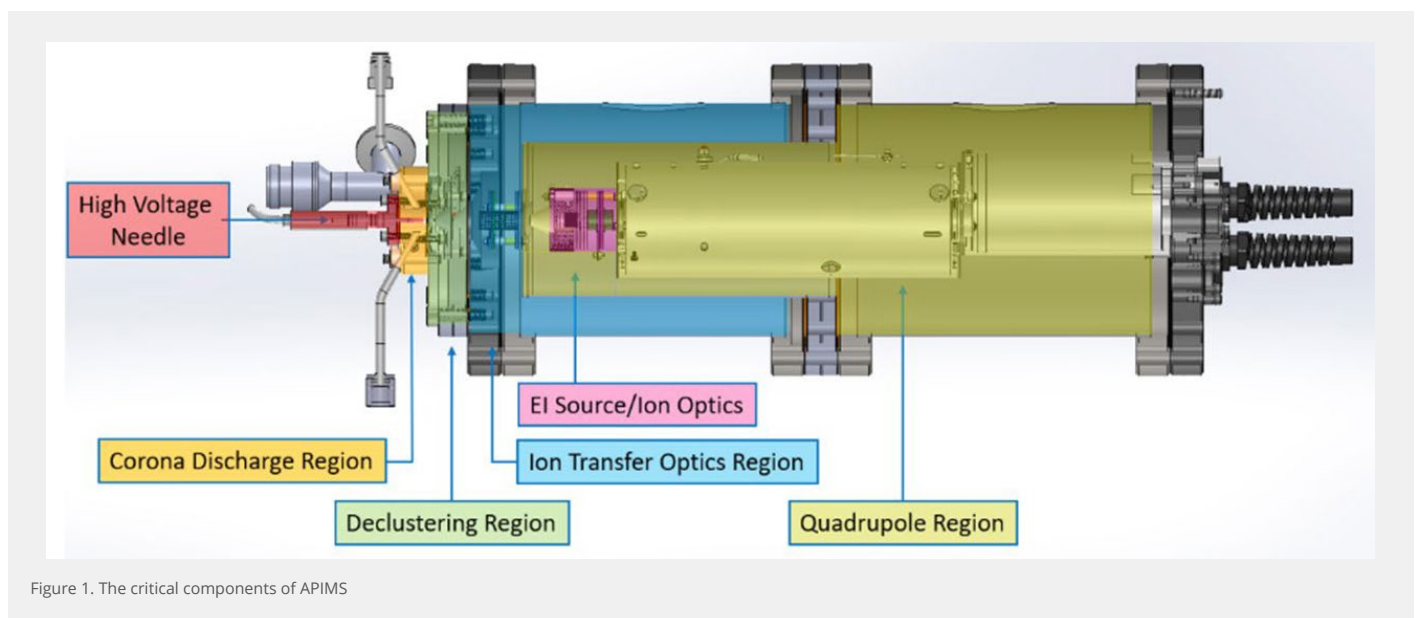
- Easy-change Corona Discharge Needle
- Dual Source (API/EI) ionization functionality
- All-metal system and fittings design
- Dry, oil-free pumping configuration (single backing pump setup)
- 1-500 amu standard configuration (multiple mass ranges available)
- Pulse-counting electron multiplier
- Analog and Digital I/O included
- Simple maintenance (<1/year)

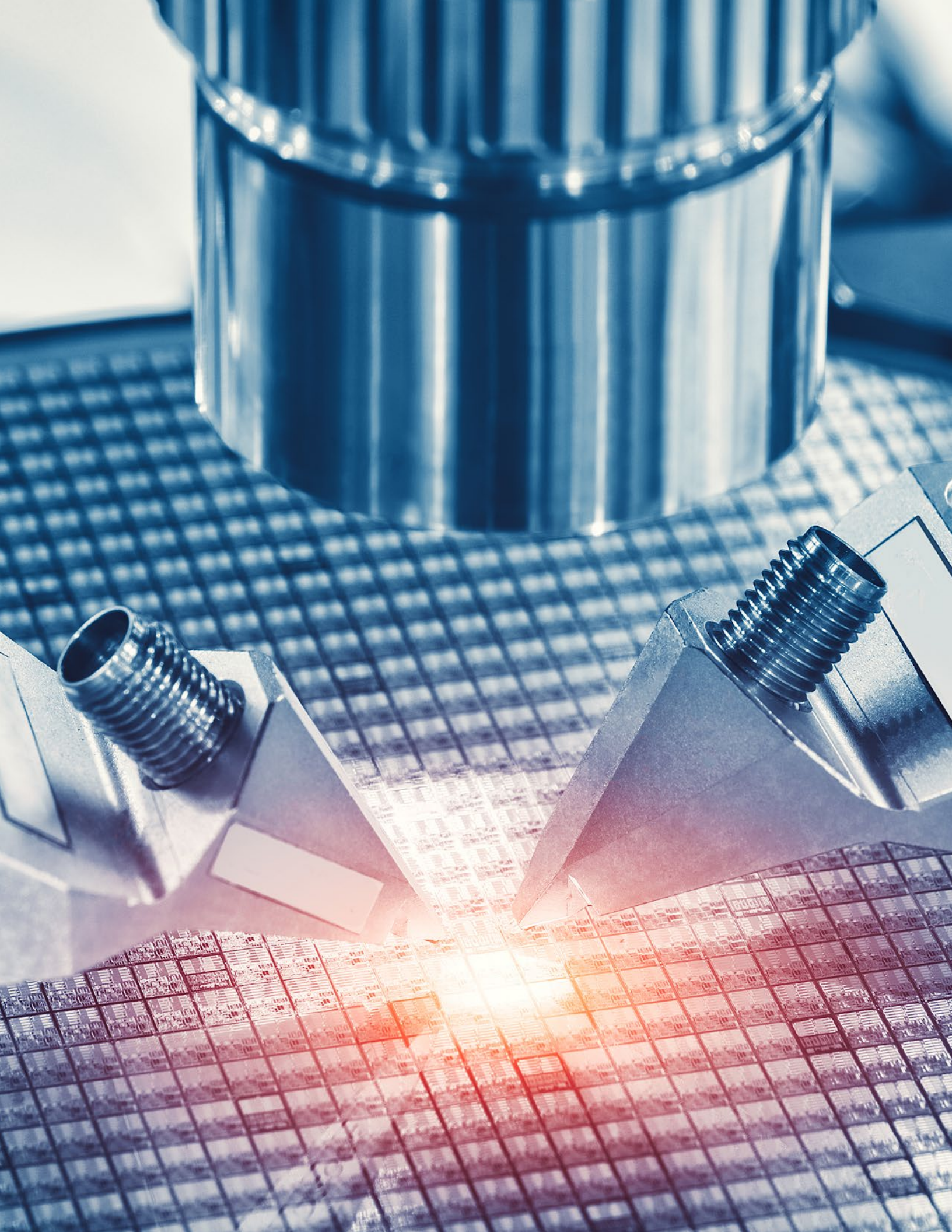
Fast, accurate ultra-trace analytical technology

Atmospheric pressure ionization is a technique that gives a mass spectrometer the very highest sensitivity for trace gas analysis in UHP samples.

A corona discharge needle is used to ionize the molecules of the bulk gas sample (Figure 1). These ions readily transfer this charge to contaminant molecules with lower ionization potentials. The approach yields ionization efficiencies approaching 100%, ensuring exceptional detection limits (Table 1).

While APIMS allows for high ion currents, resulting in low detection limits, the technique is limited to species whose ionization energy is less than that of the bulk gas, or components with sufficient proton affinity to be ionized. The VeraSpec™ APIMS system combines both EI and API ionization sources. Having two ionization techniques allows for the complete analysis of all components in the pure gas sample with one system.

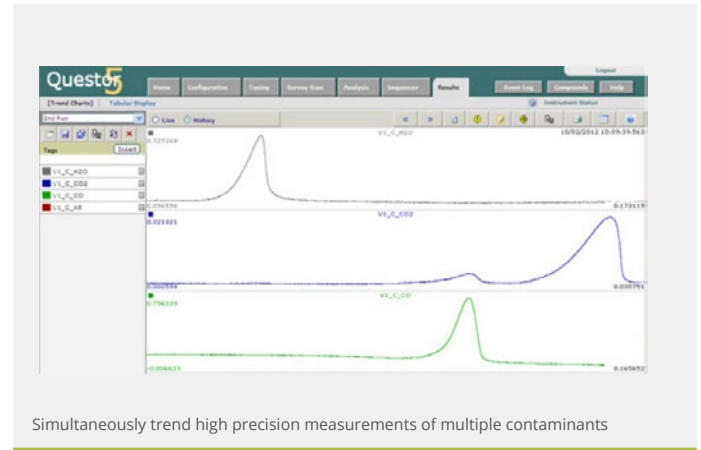
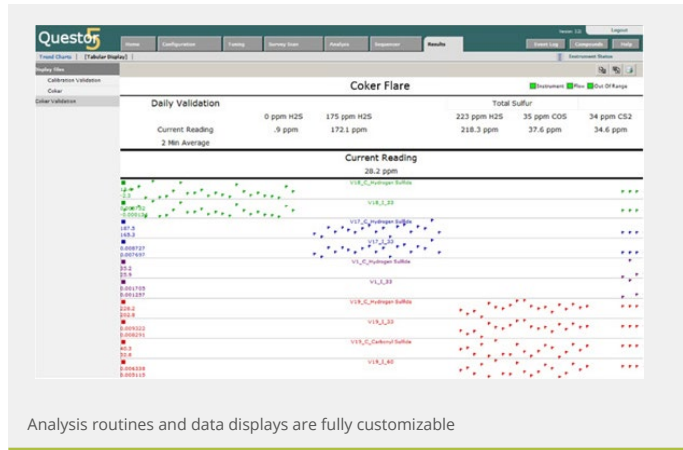




Questor5 Process Control Software

The Questor5 process control software that drives the VeraSpec™ APIMS System is designed for continuous gas monitoring in a process environment.

The intuitive web-based interface allows the user to check instrument status, review data, or run an acquisition from anywhere on the network, while maintaining government and industry security standards for login and electronic record keeping.



Questor 5 Software Features

- Manual or automated calibration
- Automated sample selector options available
- Unlimited configurable data tags and alarms
- Analysis can be triggered by external devices
- Automatic removal of spectral overlap
- Full Network Accessibility
- Security: 21 CFR Part 11
- Security levels: Administrator, User, Viewer
- Comprehensive spectral library included – NIST MS database and spectrum matching software upgrade, optional
- External communications – Ethernet, Modbus serial, digital I/O, analog I/O, OPC

Analyzer Specifications

Dual Ionization Source	Atmospheric Pressure Ionization (API) / Electron Ionization (EI)
API Source Background	Less than 1 ppt
Mass Range Options	1-500 amu
Quadrupole Tri-Filter Rod Diameter	19 mm
Detector	Pulse Counting Electron Multiplier
Detection Noise	< 3 counts in 10 ⁶
Detection Limit	< 5 ppt (component dependent)
Analysis Time	< 1 Second per Component
Sample Switching Time	15 Minutes to < 1 ppb
Bulk Gas Suitability	H ₂ , N ₂ , He, O ₂ , Ar
Impurities Monitored	CO, CO ₂ , H ₂ O, O ₂ , CH ₄ , Kr, NH ₃ , Xe (other impurities available)
Dimensions	49" (H) x 47" (W) x 24" (D) (1.2 m x 1.2 m x 0.6 m)
Maximum Number of Components	Unlimited
Maximum Number of Peaks	Unlimited
Maximum Number of Derived Values	Unlimited
Maximum Number of Alarms	Unlimited
Maximum Number of Methods	Unlimited
Maximum Number of Sequences	Unlimited
Maximum Number of Analog I/O	20 (standard) Unlimited available
Maximum Number of Digital I/O	16 (standard) Unlimited available
Maximum Number of Trend Windows	Unlimited
Communication Protocols	Modbus, Profibus, OPC

