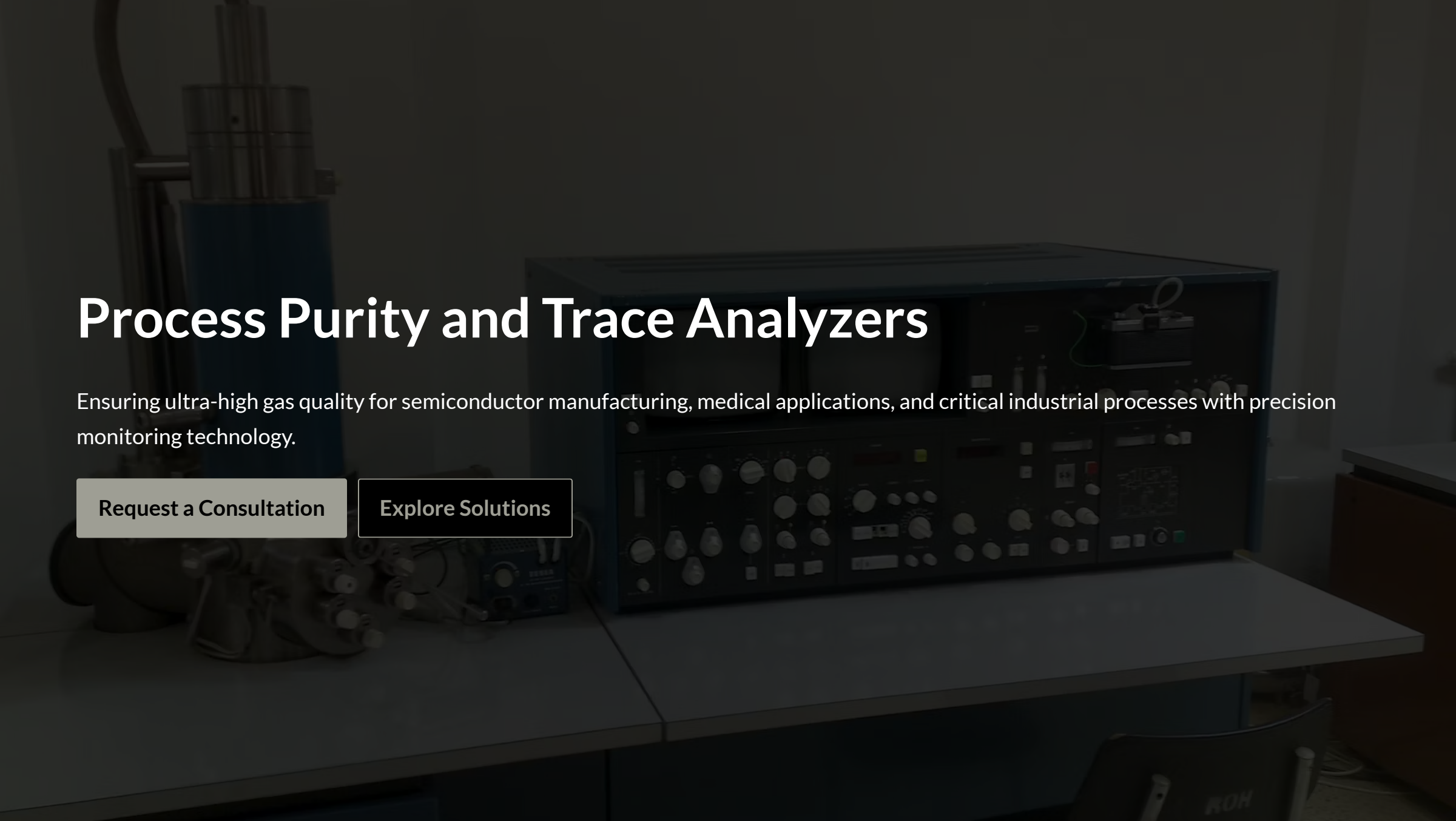


Process Purity and Trace Analyzers

Ensuring ultra-high gas quality for semiconductor manufacturing, medical applications, and critical industrial processes with precision monitoring technology.

[Request a Consultation](#)

[Explore Solutions](#)



Why Process Purity Matters

Even trace impurities in gases can damage sensitive equipment like valves and regulators, leading to costly downtime and compromised product quality. In critical applications, purity isn't just preferred—it's essential.



Ultra-high purity gases form the foundation of semiconductor manufacturing, medical applications, and advanced chemical processing where real-time monitoring prevents contamination and ensures regulatory compliance.

Cutting-Edge Technologies



Cavity Ring-Down Spectroscopy

Measures ultra-trace impurities down to sub-part-per-billion levels with unmatched precision and stability, without sample destruction.



Gas Chromatography

Separates and quantifies multiple trace gases including H₂, CO, CO₂, O₂ and hydrocarbons with highly specific detection systems.



Ion Mobility Spectrometry

Offers the lowest detection limits in a single analyzer for comprehensive impurity profiling across a wide range of gas types.

Leading Product Solutions

1

AC5000 Gas Analyzers

Non-destructive, fast-response analyzers trusted globally for monitoring inert, reactive, and corrosive gases with exceptional precision and reliability.

2

Trace Analytical Gas Chromatographs

Continuous monitoring systems with configurable detectors delivering high-sensitivity measurement of multiple impurities simultaneously.

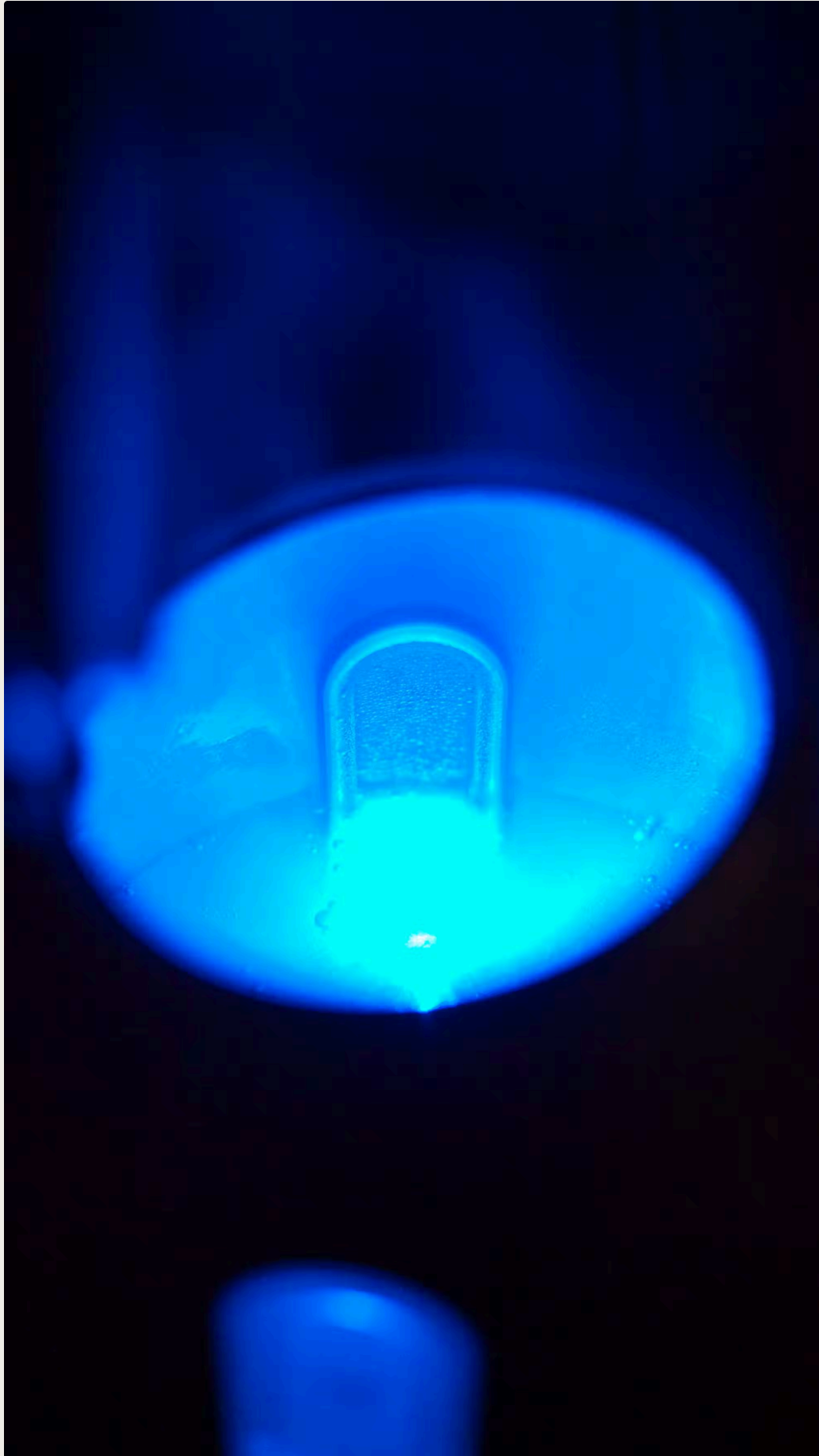
3

VICI Trace Gas Analyzer System

Fully integrated turnkey chromatograph achieving detection limits below 1 ppb, suitable for laboratory, process, or mobile applications.



Real-World Applications



Semiconductor Manufacturing

Ensuring moisture and oxygen impurities remain below critical thresholds to prevent wafer defects and optimize yields.

AC5000 Hydrogen Purity

Meeting ISO 14687 and SAE J2719 standards by detecting contaminants from ppm to sub-ppb levels for efficient power generation.

Specialty Gas Production

Continuous quality control throughout production processes to maximize product integrity and minimize waste.

Key Benefits

<1 ppb

Detection Limits

Identify even the smallest contamination events before they impact your process or product quality.

<30 sec

Response Time

Fast measurements support real-time process control and immediate contamination alerts.

99.9%

Uptime

Low maintenance requirements and calibration-free operation reduce costs and maximize reliability.

16+

Sample Points

Multipoint stream selectors allow monitoring of multiple locations with a single analyzer.

Enhancing Hydrogen Production



Continuous monitoring of hydrogen purity reduces explosion risks by detecting flammable impurities early, while enabling operators to optimize reaction conditions for improved yield and energy efficiency.

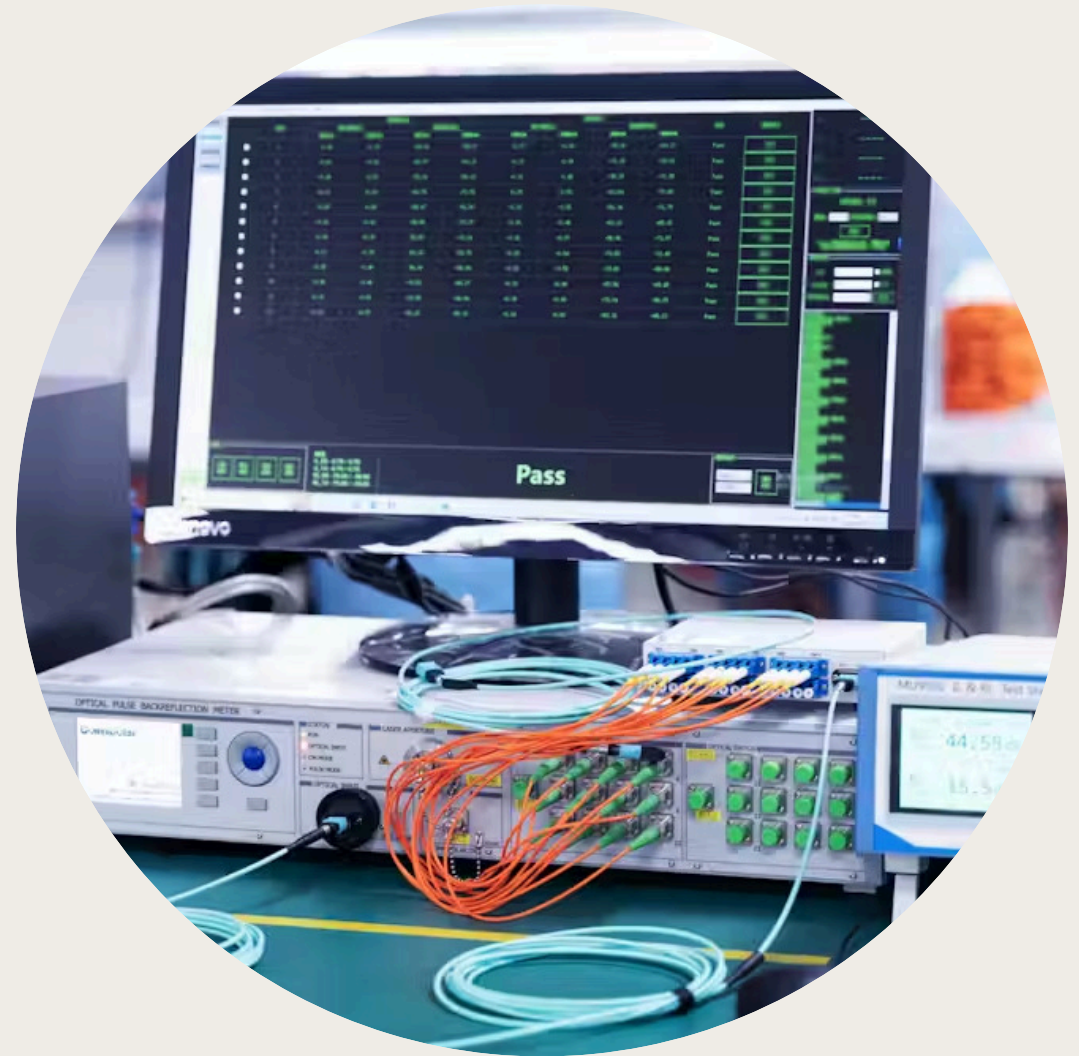
Our analytical solutions ensure compliance with strict purity standards for hydrogen applications in fuel cells, refining processes, and chemical manufacturing, safeguarding both equipment and end products.

Expert Collaboration



Tailored Solutions

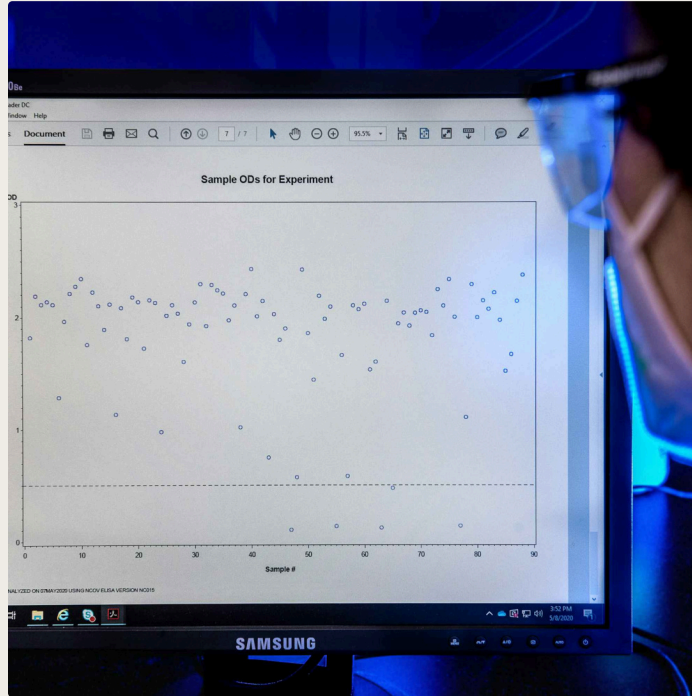
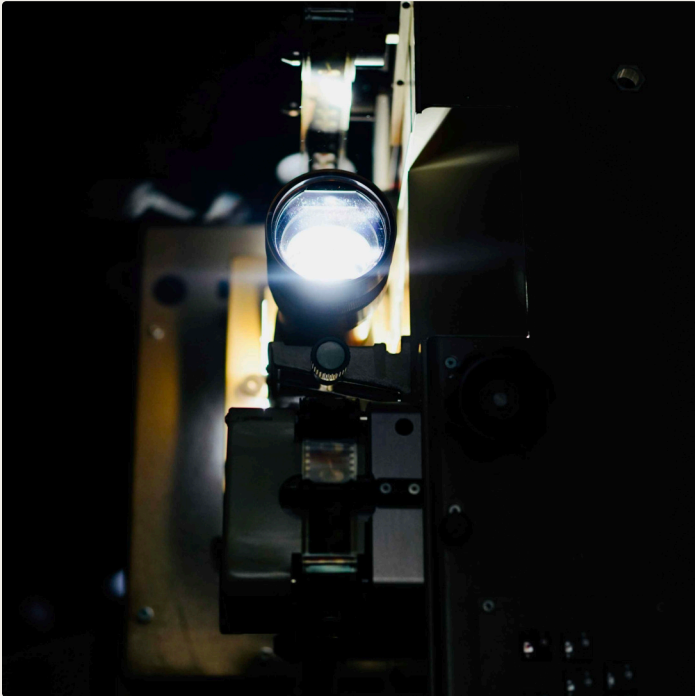
LABTECH AC5000 like Process Insights provide customized analyzer configurations and application-specific recommendations to ensure optimal performance.



Comprehensive Support

Extensive service packages include on-site technical assistance, spare parts, preventive maintenance, and warranty coverage to maximize your investment.

Visualizing Purity



Advanced visualization technologies transform invisible trace impurities into actionable data. From the laser light pathways in CRDS systems to the characteristic peaks in gas chromatography, these systems deliver the insights needed to maintain ultra-high purity standards.

Take Control of Your Gas Purity Today

Discover how advanced trace and purity analyzers can safeguard your processes, improve product quality, and enhance operational efficiency. Our experts will help you find the ideal analyzer solution tailored to your specific application and budget constraints.

[Schedule a Consul...](#)[Download Specific...](#)[Click ...](#)

Ensure Your Operations Meet the Highest Standards

With detection limits reaching parts-per-trillion levels, our cutting-edge analytical technology provides the precision and reliability you need for mission-critical applications.