



2060 Raman Analyzer

Unleashing Analytical Precision for Comprehensive Process Monitoring

**PUSHING
THE
LIMITS
TOGETHER**

 **Metrohm**
Process Analytics

Why Raman Spectroscopy in PAT?

Spectroscopic techniques are gaining traction across industries for their speed, simplicity, and accuracy. Raman spectroscopy, a standout among them, identifies and quantifies substances in liquids and solids, providing a unique fingerprint for precise differentiation, even in complex matrices. With no sample preparation needed, measurements can be taken directly into the process or by way of see-through windows, reducing waste.

Raman's unparalleled specificity makes it indispensable for accurate chemical identification and quantification. Its resilience to water interference sets it apart from techniques like Infrared spectroscopy (IR), enabling direct measurements in aqueous environments.

In process analytics, Raman spectroscopy's «real-time», inline analysis capabilities revolutionizes routine operations, providing immediate insights into chemical composition and enabling timely adjustments for optimal process control, ensuring consistent product quality, and enhancing overall operational efficiency.

WHY RAMAN SPECTROSCOPY?

- **«Real-time» monitoring:** Enables instant insights into molecular changes during processes.
- **Non-destructive analysis:** Examines samples without altering them, crucial for maintaining product integrity.
- **Identification of molecular species:** Effectively detects impurities, intermediates, or by-products.
- **Inline process control:** Facilitates «real-time» adjustments for consistent product quality.
- **Reduced sampling needs:** Minimizes time-consuming offline sampling, streamlining analysis and production.



Accurate and Reliable

HIGH-THROUGHPUT RAMAN ANALYSIS

The 2060 Raman Analyzer, equipped with a 785-nm laser and fiber optic probes, enables high-throughput Raman analysis. Ideal for product and process development and monitoring, while enhancing data collection and analysis frequency.

AUTO RAMAN SHIFT CALIBRATION FOR REPRODUCIBILITY

Featuring auto Raman shift calibration, this analyzer shows excellent reproducibility and stability. Combined with accurate instrument calibration, it facilitates high precision on the x-axis, increasing reliability in measurements, accuracy in analytical results, and easy model transfer between instruments.

ROBUST AND RELIABLE SPECTROMETER

The 2060 Raman Analyzer houses a high-performance, precise, rugged, and reliable spectrometer. This ensures consistent and accurate results, making it a dependable tool for applications in challenging environments and demanding industrial processes.

LONG-LASTING LASER STABILITY

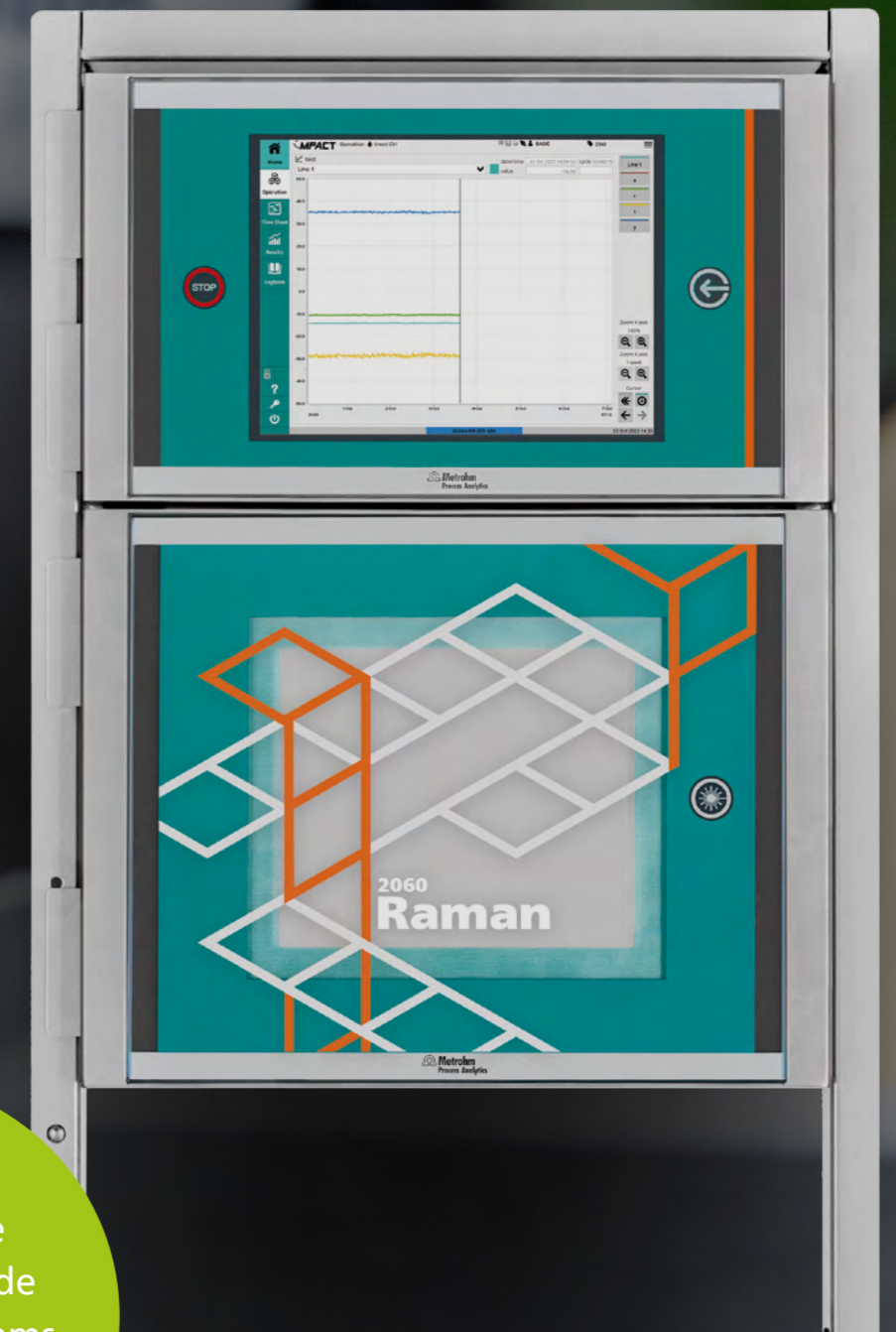
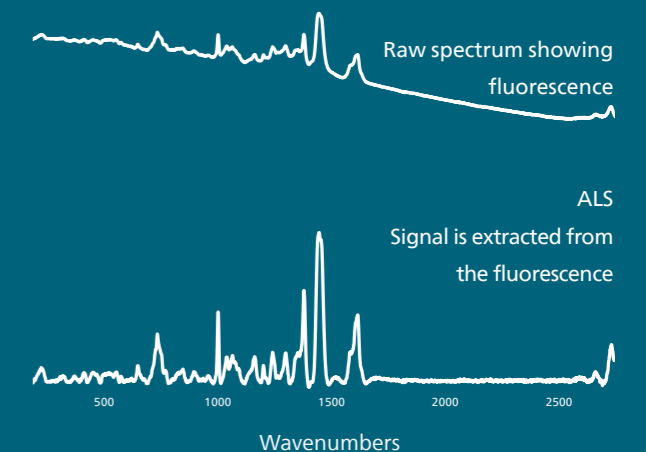
With rock-solid laser stability, the 2060 Raman Analyzer guarantees a long-lasting, stable performance. This contributes to consistent results over extended periods, minimizing variability in measurements for reliable product and process development.

CONTINUOUS MONITORING WITH SELF-MONITORING CAPABILITY

Equipped with self-monitoring capabilities, the 2060 Raman Analyzer validates each measurement. This feature enables 24/7 «real-time» monitoring, providing users with confidence in data integrity and allowing for prompt corrective actions if any issues arise.

«Fluorescence mitigation – wide range of algorithms for better results»

Diesel sample measured with 2060 Raman Analyzer (785nm laser):



True process Raman Analyzers

Experience unrivaled versatility with the 2060 Raman Analyzer offering two distinct versions tailored to your requirements: the 2060 Raman Analyzer for conventional environments and the 2060 Raman-Ex Analyzer for hazardous locations

FAST AND RELIABLE DATA TRANSMISSION

The 2060 Raman Analyzer embedded process communication protocols guarantee reliable signal transmission, allowing remote operation from a control room.

ROBUST CONSTRUCTION

Safe and rugged stainless steel (SS316) frames and cabinets rated for IP65, protecting the 2060 Raman Analyzer in temperatures from 0 to 40°C eliminating the need for an additional shelter.

ACCURATE MEASUREMENTS 24/7

The 2060 Raman Analyzer integrates a high-throughput spectrometer within a temperature-controlled thermal jacket, ensuring accurate results consistently during 24/7 operations.

MULTIPLE INSTALLATION OPTIONS

Multiple installation solutions are available to integrate the 2060 Raman Analyzer into the process that includes wall mount, free standing or even a portable option on wheels, offering maximum flexibility to suit your site specific needs.



2060 RAMAN-EX ANALYZER

Safeguarding your operations is paramount, which is why this analyzer can be effortlessly adapted for hazardous environments using an advanced purged and pressurized system guaranteeing full ATEX compliance. Trust in the inherent safety of all electrical signals exchanged with our IECEx certified instrument, ensures peace of mind throughout the plant.

Robust enclosure for longevity

Built with high-quality materials and precision engineering, ensuring durability and reliability even in demanding industrial settings.

ATEX-Compliant Purge System

Configured for hazardous settings with confidence, thanks to the advanced purge system that guarantees compliance with ATEX regulations.



2060 Raman Analyzer



2060 Raman-Ex Analyzer

Intrinsic Electrical Safety

Rest assured knowing that all electrical signals, in and out of our IECEx certified instrument, are inherently secure, prioritizing safety in every operation.

Custom made sampling solutions

CUSTOMIZABLE SAMPLING SYSTEMS FOR ENHANCED EFFICIENCY

Maximize versatility with the 2060 Raman Analyzer's adaptable sampling, allowing measurement of solid, liquid, and gas samples on a single device. This reduces costs, simplifies analysis, and facilitates decision-making, eliminating the need for sample transportation.

OPTIMAL ANALYTICAL PERFORMANCE WITH MULTIPLEXING TECHNOLOGY

Obtain the best analytical performance for your process with the 2060 Raman Analyzer's multiplexer, enabling simultaneous measurement of up to 5 sampling points. This advanced technology ensures comprehensive data collection, addressing the specific requirements of individual sampling points within the process.

VERSATILE SAMPLING REACH FOR COMPREHENSIVE MONITORING

Measure everywhere, whether close by or far away. Samples as distant as 200 meters can be effectively analyzed with the 2060 Raman Analyzer. This ensures that even in sprawling industrial environments, precise and reliable measurements can be provided, facilitating comprehensive process monitoring and control.

ENSURING LASER SAFETY WITH THE 2060 RAMAN ANALYZER

Safety is at the core of the 2060 Raman Analyzer, setting a new standard in laser safety protocols. The device is equipped with a cutting-edge probe featuring an embedded LED light, providing a clear visual indication of the laser status. This «real-time» feedback empowers users with immediate insight, ensuring safe operation and reducing the risk of accidental exposure.



Precise measurements do not only depend on the process analyzer

Two state-of-the-art software: Vision and IMPACT

The 2060 Raman Analyzer with Vision and IMPACT software brings together cutting-edge spectroscopy and process capabilities. Seamlessly integrated and user-friendly, a smooth transition for both spectroscopists and process engineers is ensured by our software suite, thereby enhancing analytical and process control capabilities.

IMPACT: ELEVATING PROCESS EFFICIENCY

Meet IMPACT, the process software designed to meet and exceed the expectations of process engineers. Boasting a suite of features, IMPACT is a comprehensive solution for professionals seeking optimal process control.

Key features of IMPACT include:

- Data Visualization: Gain insights through intuitive visual representations.
- Dashboards: Access a consolidated view of critical information for informed decision-making.
- Health Check Functions: Ensure the robustness of your processes with proactive health checks.
- Process Communication: Foster seamless communication within your process environment.
- Programming Capabilities: Tailor the software to your unique process requirements.



VISION: RELEASING THE POWER OF SPECTROSCOPY

Seamless data acquisition, chemometrics model development, and data manipulation capabilities are facilitated by *Vision*, our advanced spectroscopy software, empowering users. Tailored for spectroscopists and chemometricians, a user-friendly experience is ensured by Vision.

What sets Vision apart is its universality – it is the same software utilized in our benchtop instruments (iRaman series) and PTRam (single-channel Raman analyzer). Your workflow is streamlined through this harmonization, eliminating the need to learn a new software if it is already familiar to you in your laboratory.



IMPACT, a catalyst for
efficiency and precision
in your processes

EFFICIENCY
MEETS
CONTINUITY
WITH VISION

Metrohm service and support – close to you

WE ARE A STRONG PARTNER

We are present in more than 170 countries globally. Our local specialists make sure our Raman spectroscopy technology is smoothly implemented at your company. Please feel free to contact us and we can work together on your application to develop an ideal solution that meets your individual requirements.

