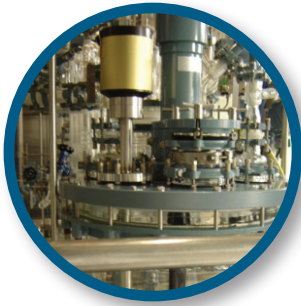


# RAMANRXN2™ HYBRID Raman Analyzer



The **RAMANRXN SYSTEMS™** suite of instruments has set the standard for analyzing, monitoring and controlling chemical processes since its introduction in 2000. Raman spectroscopy provides the chemical specificity of a mid-IR analyzer with the ease of sampling of a near-IR analyzer.



The **RAMANRXN2™ HYBRID** analyzer is the latest advanced Raman analyzer from Kaiser to join the **RAMANRXN SYSTEMS™** suite. It features **HYBRID** (micron and mm) probe capability, high resolution, as well as transportability. The **RAMANRXN2™ HYBRID** analyzer when combined with the latest version of the iC Raman™ software makes this analyzer the most advanced, flexible analyzer for Raman methods development and reaction analysis. The Raman spectrum contains features that are ideal for fast qualitative and robust quantitative analyses, often without the need for multivariate techniques.



Versatility was a key goal when developing the feature set for this analyzer. Millimeter to micron sampling versatility is accomplished by coupling the **RAMANRXN2™ HYBRID** analyzer with either the MR Probe or the *PhAT* Probe probeheads for non-contact or direct insertion sampling. Standard on all **RAMANRXN2C™** models and available as an option for the **RAMANRXN2™** models is an ergonomic trolley including built-in probe and optic storage, a routine-analysis sample compartment, fiber storage, and the analyzer control system.

The heart of the **RAMANRXN2™ HYBRID** analyzer is a unique analyzer self monitoring system, Cal-Check™, to ensure the validity of each analysis. The analyzer is capable of self-calibration, Auto-Cal™, in extreme environments and utilizes self-diagnostics and spectral correction methods when system calibration is unnecessary. The analyzer's precision is essential for robust chemometric analyses and calibration transfer between analyzers.

The **RAMANRXN2™ HYBRID** analyzer provides the capability of several different Raman analyzers in a single system. Equally capable of being a transportable raw materials identification analyzer, a bench-top analyzer for methods development in the lab, reaction monitoring in the pilot plant, process control development in a manufacturing environment, or a dedicated quality control analyzer.



The **RAMANRXN2™ HYBRID** fiber-coupled Raman analyzer serves the needs of the analytical Raman market, process analytics, chemical, and polymers markets as well as the pharmaceutical and biotech market. When combined with the latest compliant version of the iC Raman™ data acquisition software, the **RAMANRXN2™ HYBRID** analyzer meets the needs of both GLP and GMP governed areas within the pharmaceutical industry for both PAT and QbD applications.



## Best of Best Worlds

- mm to micron sampling
- Optimized liquids analysis mode
- Optimized solids analysis mode
- Qualitative and quantitative analysis
- Laboratory, scale-up, and pilot-plant compatible

## Applications

- Pharmaceutical formulations development: Blending, granulations, drying
- Pharmaceutical API development: Reaction chemistry, yield, form ID
- Polymerization
- Polymer Blending
- Extrusion Monitoring
- Biologics / Biotech



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# Flexible Raman Spectroscopy...



## Analyzer Features

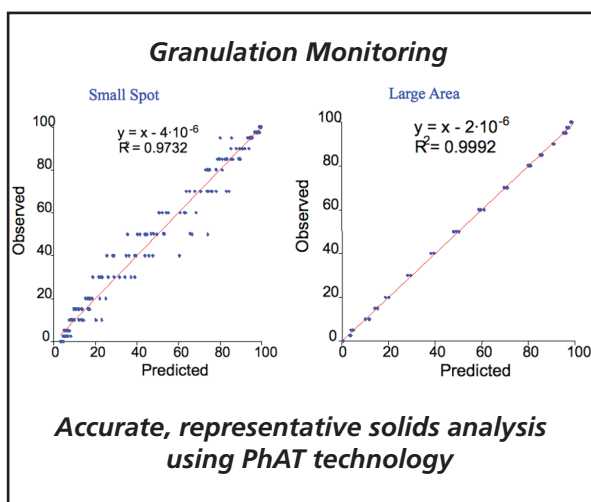
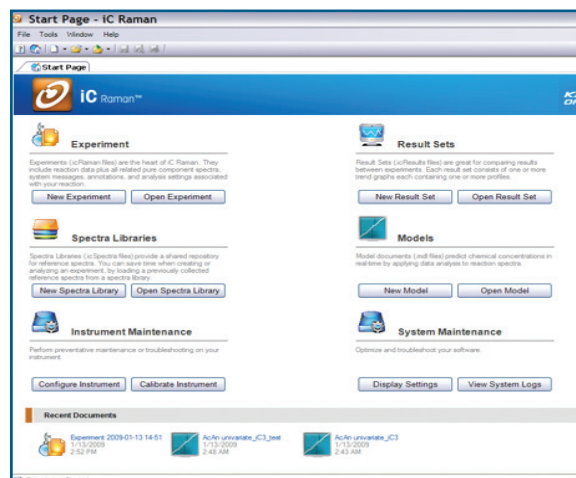
- High performance spectroscopy
- Representative mm scale measurements
- *in situ* reaction sampling
- non-destructive measurements

## Options

- Transport option
- Laboratory optics and probeheads
- Pilot plant compatible probes
- Sampling compartment

## iC Raman™ 3.0

- 21 CFR Part 11 compatible data acquisition
- Wizard driven, easy-to-use application
- Analyzer set-up and control
- Experiment templates
- Enhanced experiment phases
- ConclRT option
- Trending, qualitative and quantitative analysis modes



## Precision, Stability, & Methods Transfer

- Better than 0.1 cm<sup>-1</sup> long-term analyzer precision
- Cal-Check™ – system verification
- Auto-Cal™ for analyzer calibration
- NIST-traceable intensity calibration protocol – calibration from the sample to the detector
- Demonstrated calibration transfer: Plant-to-plant, country-to-country

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