

Raman Analyzers

The **RPM Series** are multi-channel CCD-based Raman analyzers designed for real-time process monitoring and process development applications. They provide rapid, accurate and stable monitoring of physical properties and chemical composition of liquids, emulsions, slurries and solids.

The **RPM MD™** can be configured as a process rackmount or bench top analyzer for general purpose use in the control room or in the lab. The **RPM 785™** is a process Raman analyzer packaged for use in hazardous areas.

- Remote, simultaneous analysis of up to four sampling points at a distance of up to 200 meters using fiber optic sampling.
- NeXCAL™ continuous automatic frequency scale correction provides permanent calibration.
- Operates on the same powerful PC80™ process software found in the Analect series of on-line and process development FTIR and FT-NIR analyzers. For laboratory use, GRAMS/AI7™ is offered.
- Communications options including Modbus®, OPC®, CØ1, Ethernet and analog protocols.
- Comprehensive chemometric software including CPSA 32™, Matlab®, Pirouette® and GRAMS/AI7 is available.
- 21 CFR Part 11 compliance available.



Raman Advantage

- High spectral information content
- Compositional measurements of aqueous solutions
- Non-destructive as well as non-contact sampling
- No sample preparation required
- Sampling through windows, vials, blister packs, and other packaging

RAMAN APPLICATIONS

Petrochemical & Chemical

- Para-Xylene purity
- Toluene recovery
- Polystyrene production
- Polybutadiene structure
- Aqueous solutions

Polymers

- Polymer identification
- Polymer morphology
- Polymer emulsions
- Acid number predictions

Pharmaceutical

- Polymorph transformation
- Tablet identification
- Raw materials testing
- Reaction monitoring

Food & Beverage

- Moisture and protein content

Specifications

Spectrometer

- Dyson Relay imaging spectrometer
- Spectral range: 150-2400 and 2300-3500 cm^{-1}
- Resolution: 6 cm^{-1}
- Frequency accuracy: 0.5 cm^{-1}
- Frequency repeatability: 0.1 cm^{-1}

Ambient Environmental Conditions

- Temperature range: 10-30°C (50-86°F)
- Max. Relative Humidity (RH): 95%, non-condensing
- Area Classification: General purpose or hazardous

Utility Information

- AC power voltage: 115/230 Vac \pm 10%
- AC power frequency: 50/60 Hz

Laser

- 785 nm, Class IIIb
- 300 mW external cavity stabilized

Camera

- Back illuminated deep depletion scientific CCD
- Operational temperature: -75° & -30°C
- Standard array size: 1340 x 100 20 μ pixels
- Optional array size: 1340 x 400 20 μ pixels
- Optional array size: 1024 x 256 25 μ pixels

Process Control Interface

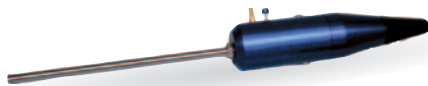
- Modbus, CØ1, OPC, Ethernet and analog protocols
- Fiber optic Ethernet and serial communications options

Options

- Chemometrics: CPSA 32, Matlab, Pirouette, GRAMS/AI7
- Fiber connectors: FC and SMA
- IQ/OQ documentation
- Windows based front panel GUI for Model 785 operated by touchscreen

Instrument Dimensions

- RPM 785
 - 93x76x43 cm (36x30x17)
 - Weight: 175 kg (385 lb) - uncrated
- RPM MD
 - 66x46x36 cm (26x18x14)
 - Weight: 25 kg (55 lb) - uncrated



Raman Process Probe

PC80 Software Drives Your Process Application

Automate many aspects of your process

- Control I/O to switch streams and monitor a variety of system conditions
- Collect spectra and apply quantitative analysis routines
- Transmit product properties, instrument QC data, and alarms via versatile communications protocols

Implement calibration tools and programming flexibility

- Apply a wide variety of quantitative analysis routines including: CPSA – Constrained Principal Component Spectral Analysis, Matlab and Pirouette
- Utilize ASL – Basic Language – to achieve total programming flexibility
- Operate the system remotely by using pcANYWHERE™
- Multi-level password access

PC80 validation

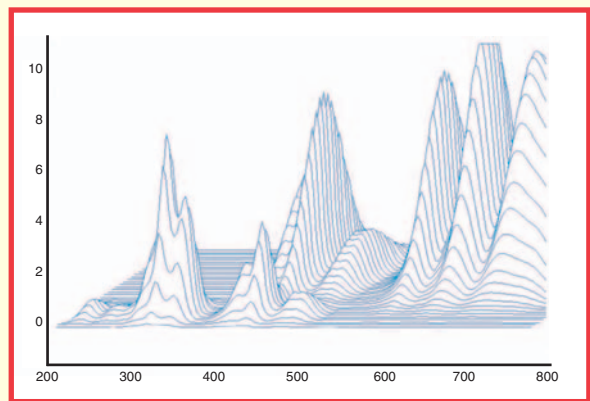
- 21 CFR Part 11 compliant
- Implement on-line validation methods like ASTM D6122

Desktop data station with software, standard

- Access the on-line help system for quick reference

GRAMS/AI7

- An intuitive user interface allows for quick and easy processing of single and multi-dimensional data files.
- Powerful display objects such as contour plots, equations, 3D projection maps, peak tables and search reports.
- 21 CFR Part 11 compliance provides audit trail within each data file to ensure traceability and security of changes.



Three dimensional spectral display



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International locations - see our website for your authorized representative.

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