

PRODUCT DATASHEET

PCM 5000™

FTIR/FT-NIR process analyzers to measure physical, chemical and compositional properties of liquids, solids and gases



Sampling Flexibility

Fast and Accurate

On-line, in-situ, and at-line

- Chemicals
- Petrochemicals
- Polymers
- General manufacturing
- Pharmaceuticals
- Gas analysis

PCM 5000

FTIR/FT-NIR Process Analyzers

The **PCM 5000™** FTIR/FT-NIR process analyzers measure physical, chemical and compositional properties of liquids, solids and gases.

- On-line, in-situ, and at-line monitoring of batch and continuous processes
- Displays up to 15 properties at once and measures up to 30 properties per stream
- Optical multiplexing capabilities provide analysis of up to 16 process streams using fiber optic or extractive stream switching
- Utilizes process-proven Diamond 20 Transept™ optical head:
 - Vibration tolerant optical system allows placement of analyzer in hostile industrial environments
 - Absolute optical alignment of components provides for repeatable spectra, allowing calibrations to remain stable indefinitely
- SpectraRTS™ software engineered exclusively for on-line monitoring, allowing use by engineers, maintenance personnel, and chemists
- Communication options including OPC®, Modbus® as well as analog protocols.
- The PCM monitors versatility allows for a wide range of applications including:
 - Chemicals
 - Petrochemicals
 - Polymers
 - General manufacturing
 - Pharmaceuticals
 - Gas analysis



Full chemometric modeling capability including SpectraQuant™, MATLAB®, Unscrambler®, & Pirouette®.

The **Diamond 20** analyzer supports on-line systems with process development utilizing the same optical bench as the PCM for instrument to instrument calibration data transfer. **SpectraStudio™** a Windows® based data collection and analysis program is designed to provide a high degree of flexibility to users operating in a laboratory environment.

Sampling Flexibility

Liquids	Mid IR	NearIR
Transmission Probes:	✓	✓
ATR Probes:	✓	–
Cross-line Probes:	✓	✓
Slip-stream Probes:	✓	✓
Gases		
Gas Cell:	✓	–
Solids		
Diffuse Reflectance:	–	✓



PCM Sampling Flexibility



FT-NIR Cross-Line Probe



FT-NIR Immersion Probe



Mid-IR ATR Diamond Probe

Specifications:

Spectrometer

Interferometer:	Transept IV™ hermetically sealed module with refractively scanned design
Optical Range:	000–450 cm ⁻¹ Mid-IR; 12000–1200 cm ⁻¹ NIR
Detector Options:	DTGS Pyroelectric; InAs; InGaAs; MCT

Analysis Time

30–60 sec. for multiple property predictions

Ambient Environment Conditions

0–38°C standard ambient temperature -20–50°C with optional heating and A/C system

Area Classification

ATEX/CENELEC Zone 1 & 2

NFPA Class I, Division 1 & 2

Process Control Interface

Modbus®, OPC and analog protocols

Fiber optic Ethernet and serial communications options

Utility Requirements –Analyzer and Cell Enclosure

Main power 115/230 VAC 50/60Hz single phase 1500 watts

Instrument – Optical Head and Sample Box

Dimensions: 220cm H x 97cm W x 46cm D (87 H x 38 W x 18 D)

Weight: 270kg (600lb)

SpectraRTS Software Drives Your Process

Automate many aspects of your process

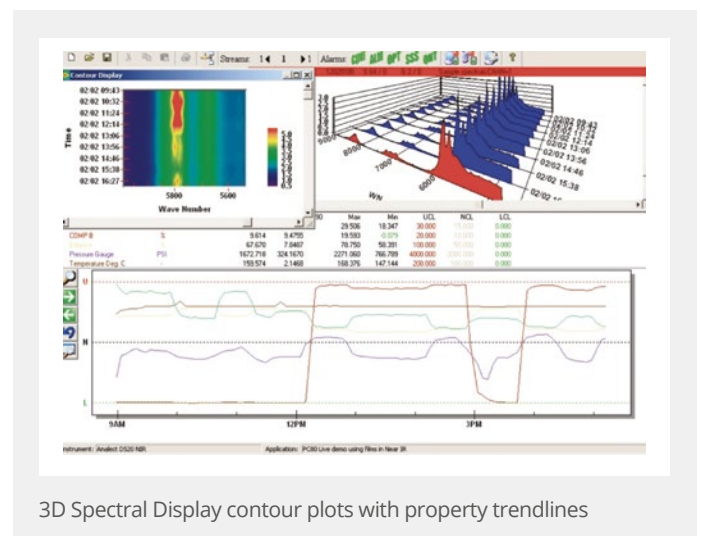
- Control I/O to switch valves and monitor a variety of sample system conditions
- Collect spectra and apply quantitative analysis routines
- Transmit product properties, instrument QC data, and alarms via versatile communications protocols

Implement calibration tools and programming flexibility

- Apply a wide variety of quantitative analysis routines including: SpectraQuant™, MATLAB® and Pirouette®
- Utilizes Visual Basic for Applications (VBA) compatible scripting language to achieve total programming flexibility
- Operate the system remotely by using pcANYWHERE™ or Timbuktu® software
- Multi-level password access

Validate and diagnose your system

- Implement on-line validation methods, such as ASTM D6122
- Automatically monitor and trend the system's "health" with Remote R_x software for preventative maintenance scheduling
- Access the on-line help system for quick reference



GAIN REAL-TIME INSIGHT INTO YOUR PROCESS

Process Insights delivers premium analytical sensors, analyzers, instrumentation, software and solutions that are mission-critical to keep your operations, personnel, and the environment safe. Our commitment to customer satisfaction is evident through our diverse range of products, programs, and services, designed to accommodate various budgets and application needs.

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Process Insights – The Americas

14400 Hollister Street, Suite 800B, Houston, TX 77066, USA +1 713 947 9591

Process Insights – EMEA

ATRICOM, Lyoner Strasse 15, 60528 Frankfurt, Germany +49 69 20436910

Process Insights – APAC

Wujiang Economic and Technology, Development Zone, No. 258 Yi He Road, 215200 Suzhou, Jiangsu Province, China +86 400 086 0106

For a complete range of products, applications, systems, and service options, please contact us at:
info@process-insights.com

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