Diamond MX™

FT-NIR Analyzer

The **⚠Analect**™ **Diamond MX**™ *FT-NIR process analyzer is configured for rackmount or benchtop applications. It provides rapid, accurate and stable real-time monitoring of physical properties and chemical composition of liquids, solids and gases, all from one instrument.*

- Nine different sampling devices can be used with the same Diamond MX system.
- Unique to the Diamond MX system, the entire beam is switched from channel to channel, enhancing energy throughput and channel-to-channel precision.
- Fiber-optic sampling also allows the Diamond MX system to be placed remotely in any general purpose area.

AIT Worldwide
Leader in Process Analytics

- The heart of the Analyzer is the rugged Diamond 20™ Transept™ interferometer featuring superior analytical stability and accuracy.
- The system uses the same powerful SpectraRTS™ process software found in the Analect series of on-line and process development FTIR and FT-NIR analyzers.
- Full chemometric modeling capability including SpectraQuant,™ Unscrambler®, MATLAB® and Pirouette®.
- Seamless transfer of calibration between all Analect analyzers.
- The Diamond MX's system versatility is demonstrated by its range of applications for raw material QC, on-line and in-situ process monitoring and final product inspection in these industries: **Hydrocarbon Processing**
Pharmaceutical
Specialty Chemical
Food & beverage
Chemical Polymers

MX Sampling Options

- **Immersion Probe**
- **Cross-line Probe**
- **ReflectIR Diffuse Reflectance**
- **Hand Held Diffuse Reflectance Probes**
- **Transmission Cells**
- **Gas Cells**
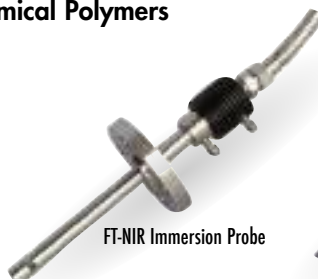
FT-NIR Immersion Probe   FT-NIR Cross-Line Probe

Specifications

Spectrometer

Interferometer:

- Transept IV™ hermetically sealed module with refractively scanned design
- Optical range 12,000 - 1200 cm^{-1}
- Detector options: InGAs, InAs

Ambient Environmental Conditions

- Temperature Range: 10-30°C (68-86°F)
- Relative Humidity Range (RH):   95%, non-condensing
- Electrical Area Classification: General Purpose

Utility Information

- AC Power voltage: 115/230 Vac ± 10%
- AC power freq: 50/60 Hz ± 1 Hz
- AC power usage: 300 watts

Options

- Internal or external source
- Multiple probe channels using 9-channel fiber-optic multiplexer
- Background and/or reference channel
- FC fiber connectors (SMA standard), ST option
- Multiple detector options
- Remote R$_x$ diagnostics
- Desktop or Rackmount analyzer versions; includes Windows-based data station and software

**Analect Lab to On-Line –** The Analect **Diamond 20** FT-NIR analyzer is used for calibration and data collection in support of the **Diamond MX**™ process analyzer. Calibrations can be seamlessly transferred between all Analect FT-NIR analyzers.

Analect ➤
Diamond 20™

Experience – Our staff of applications experts provide feasibility and calibration services that set the worldwide standard. We also provide the systems integration, commissioning and post-installation support to ensure your success.

SpectraRTS™ Software Drives Your Application

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 preventative maintenance scheduling
- Access the on-line help system for quick reference
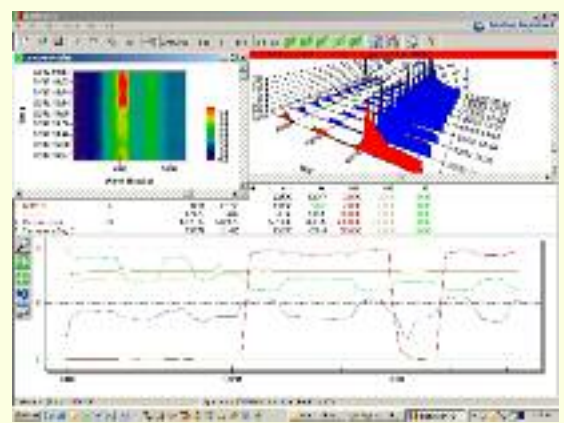
3D Spectral Display contour plots with property trendlines

ϵ