

## From the World Leader in Refinery Process NIR...

Welcome to the **PIONIR® MVP+™** Process Development Near Infrared analyzer for use in the lab. The PIONIR MVP+ system technology is identical to the **PIONIR® 1024X™** process analyzer, the most reliable analyzer in the industry.

Operation of the MVP+ benchtop system is enhanced with AIT's new **SpectraQ™** software. It works intuitively with **SpectraQuant™** model development software, as well as heritage chemometric software currently used on the PIONIR platform. Models developed on the MVP+ system using Absolute Virtual Instrument, (AVI) technology, are transferable to the 1024X on-line system resulting in seamless and simple model deployment.

The PIONIR MVP+ analyzer can also be adapted for use as a Rackmount system for on-line analysis from the control room.



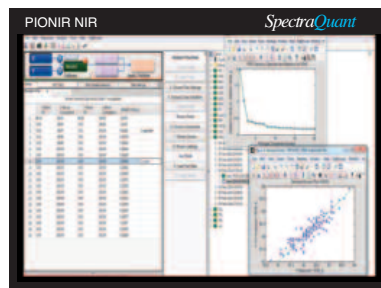
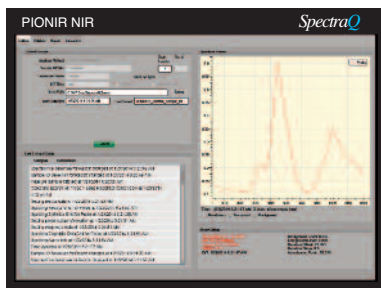
### THE MOST COMPREHENSIVE SOFTWARE PACKAGE AVAILABLE TODAY!



**SpectraQ™** software is designed for collecting calibration spectra and performing routine analysis. The spectra can be sorted periodically into data sets for model updates as well as for new model creation.



**SpectraQuant™** chemometric software is a dynamic Windows® based tool that utilizes Principal Component Analysis (PCA/PCR). It consolidates today's best features for modeling complex multi-components.



### Upgrade to the advanced PIONIR® MVP+

For PIONIR MVP heritage users, our engineers have designed an upgrade path to bring your existing lab system into a state-of-the-art configuration. We can quickly refurbish your current system in our facility or we'll offer you our Express Exchange Program.

The MVP+ features our new embedded electronics to put your model development back on the fast track and a smaller benchtop footprint. Just attach a keyboard & monitor and you're ready to go.



PIONIR MVP+ Rackmount

PIONIR 1024X



Ultimately, the productivity achieved on the PIONIR MVP+ analyzer positions you perfectly to implement on-line measurements with our Rackmount model or 1024X analyzer built to withstand harsh process environments.

Our world class optical bench utilizes the fixed holographic grating and 1024 element silicon diode array assembly. The most stable and reliable measurements are produced year after year.

The PIONIR 1024X analyzer is designed for optical multiplexing or stream switching, it's your choice. So multiple streams with multiple measurements on each stream are easily achieved with one system.

**SpectraRTS<sup>™</sup>** delivers flexible set-up and control of your system, extensive diagnostics, easy-to-use scripting and robust DCS communications. Interactive communications allow model sets to be switched automatically when changing blend types thereby maximizing blended measurement efficiency.

## Specifications

### Spectrometer:

- Fixed holographic grating with photodiode array detector, features no moving parts

### Operating Range:

- 800–1080 nm (third overtone)
- Analysis Time:
- 30–60 seconds for multiple property predictions

### Optical Fiber:

- Proprietary design and manufacture. 200 micron fiber diameter; low OH silica core inside environmentally jacketed cable

### Spectral Performance:

- Spectral Resolution: 3.3 nm over full range, Absolute Virtual Instrument standard
- Dynamic Range: 25,000:1 at 850 nm (15 second measurement)
- Wavelength Repeatability: ± 0.004 nm scan to scan
- Wavelength Accuracy: ± 0.01 nm long term (AVI Corrected)

### Sample Probe (Slip Stream):

- Fiber optically coupled to analyzer
- Modular design for easy maintenance
- Self-referencing design features dual sample and reference paths for background correction
- 1/8 inch NPT (female) threaded ports—2 input, 2 output
- Silica window material, 316 stainless steel sample cell body
- Pressure rating to 3450 KPa (500 psi)
- Sample flow: 200 to 800 mL per minute
- Temperature rating to 80°C (176°F)

### Environmental Conditions:

- Temperature: 10°C to 35°C (50°F to 95°F)
- Humidity: Non-Condensing

### Area Classification:

- General Purpose - Non Hazardous

### Utility Requirements:

- Electrical Power: 110/120 Vac, 50/60 Hz  
220/240 Vac, 50/60 Hz

### Instrument Dimensions:

- PIONIR MVP:  
– 61x48x34 cm (24x19x14 inches)  
– Weight: 27 kg (60 lb)—Uncrated

### Process Control Interface:

- Control: 4 digital AC inputs and 4 outputs standard, up to 16 total AC inputs or outputs (optional)
- Optional 4–20 mA analog output to interface to process control computer with external accessory
- Optional OPC or Modbus<sup>™</sup> interface allows bi-directional information exchange between the PIONIR and the process control computer
- Sensor input: Two 4–20 mA analog inputs standard

### Contact Us:

AIT offers annual hardware maintenance and calibration modeling service support contracts.

