

FTIR/FT-NIR Analyzer

The **Analect™ Diamond 20** analyzer is an FTIR/FT-NIR system designed for operation in rugged at-line environments as well as the laboratory bench. The Diamond 20 analyzer is typically used for calibration and applications development in support of Analect's series of on-line continuous stream and batch process analyzers.

- Wide array of MIR and NIR sampling and detector options.
- Hermetically sealed interferometer withstands moisture and protects against contamination.
- Seamless calibration transfer between Diamond 20 and other Analect FTIR process analyzers.
- Compact 18" footprint requires less bench space.
- Grams/AI™ software provides fast and flexible data management and processing with an extensive library of applications.
- Full chemometric modeling capability including SpectraQuant™, Unscrambler®, MATLAB® and Pirouette®.
- Process application development capability using SpectraRTS™, QC80 and PQ80™ Software.
- Two external beam ports.
- Analect Optibus™ efficiently transports IR beam to any sampling peripheral.
- Embedded data collection computer for high signal-to-noise spectra.
- The versatility of the Diamond 20 analyzer is well demonstrated by its range of applications and industries served:

– Air monitoring

– Refinery and petrochemical

– QA/QC

– General chemical

– Pharmaceuticals

– Paint and coating

– Film extrusion/fiber webs

– Agriculture chemicals

– Polymers



Analect Diamond 20

The Transept™ Interferometer

- Process-proven FT optical bench featuring Transept interferometer design and Optibus light conduit
- Superior analytical stability and accuracy
- Vibration tolerant wedges are used instead of vibration sensitive moving mirrors.
- Permanently aligned optics using Corner-Cube technology
- Core optical technology shared in all Analect FTIR products

Specifications

Analyzer Performance

- Interferometer: TranseptIV hermetically-sealed module with refractively scanned design. Precision cross-roller bearings with fixed Corner-Cube mirrors.
- Spectral range: Extended Mid-IR 7,400 to 450 cm^{-1} ; Near-IR 12,000 to 1,200 cm^{-1} .
- Resolution: Keyboard-selectable to 1.5 cm^{-1} (unapodized); 2 cm^{-1} (apodized).
- Scanning Speed: Automatically optimized for detector type or software-selectable for specific applications. Adaptive digital servo drive uses laser quadrature for positive position reference.
- Apodization Functions: Choice of 14 keyboard-selectable standard functions.
- Infrared Source: Internal, air-cooled, high efficiency Reflex Sphere.
- Signal Conversion: Computer-selectable gain, high- and low-pass filters, and delay compensation. High-accuracy, true 18-bit ADC.
- Sampling Optics: Internal focused beam, external collimated beams.
- Cursor Readouts: Continuous, in cm^{-1} or nanometers for abscissa, %T or absorbance units.
- Detector: Standard DTGS pyroelectric.

Detector Options

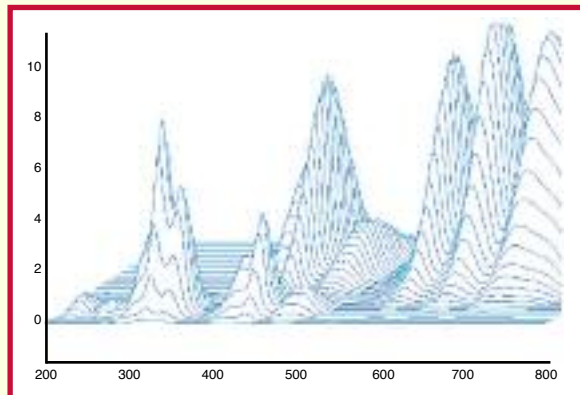
- Full line of external Optibus detectors, including DTGS, liquid nitrogen cooled MCT, thermo-electrically controlled DTGS, MCT, InAs, and InGaAs. Optical bench can accommodate two software-selectable detectors at one time. Optional signal multiplexers allow additional detectors.

Sampling Options

- RefinIR/RefinIR100t automated lab refinery accessories
- Fiber optic devices
 - Diffuse reflectance
 - Fiber optic probes, launchers and multiplexers
- Probes
 - ATR for highly absorbing liquids
 - Diamond-tipped probes for harsh conditions
 - General reaction probes
- Sample cells
 - Short gas cells
 - Laminar flow long gas cells
 - White cells
 - Liquid transmission cells
 - Flow-through and open boat ATR

The Power of GRAMS™/AI

- 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.
- 21CFR Part 11 compliance provides audit trail within each data file to ensure traceability and security of changes.



Three dimensional spectral display



Gas Cell – for ambient air and continuous emission monitoring applications

Hot Shot – is a heated sampling accessory with vials designed for analysis of edible oils & polyols

Contact us to learn more about our Analect on-line systems:

- Diamond MX™
- EVM™
- Hydrocarbon SmartSystem™
- PCM 1000/5000™



Contact our Marketing Dept. **AIT Applied Instrument Technologies** 2121 Aviation Drive, Upland, CA 91786

(909)204-3700 T • (909)204-3701 F • ait@AITanalyzers.com • www.AITanalyzers.com

International locations—see our website for your authorized representative **AIT Applied Instrument Technologies, Inc.**

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