

I N F R A 3 0 0 0  
F T I R

Products | Applications | Software | Accessories | Consumables | Services

Analytical Technologies Limited  
[www.analyticalgroup.net](http://www.analyticalgroup.net)

## Features :

- New type cube corner Michelson interferometer features smaller size and more compact structure, providing higher stability and less sensitive to vibrations and thermal variations than conventional Michelson interferometer.
- Fully sealed damp and dust proof interferometer, adopting high performance, long lifetime sealing material and desiccator, ensures higher adaptability to the environment and increases accuracy and reliability in operation. Viewable window for silicagel enables easy observation and replacement.
- Isolated IR source and large space heat dissipation chamber design provides higher thermal stability and Self-Compensation Stable interference is obtained without the need of dynamic adjustment..
- SNR is calculated value that represents the ratio of RMS signal to RMS noise.
- The peak value is the highest voltage that the waveform will ever reach
- All optics and mirrors are aluminum coated
- Reliable calibration mechanism
- Critical components checked prior to every scan
- Automatic recognition of accessories
- Temperature controlled and moisture resistant optics
- High intensity IR source adopts a reflex sphere to obtain even and stable IR radiation.
- Cooling fan stretch suspending design ensures good mechanical stability and multimedia tutorials.
- Super wide sample compartment provides more flexibility to accommodate various accessories.
- Built in purge facility with sealed and desiccated optical set up with 5 years desiccant replacement.
- The application of programmable gain amplifier, high accuracy A/D converter and embedded computer improves the accuracy and reliability of the whole system.
- The spectrometer connects to PC via a USB port or Ethernet cable for automatic control and data communication, fully realizing plug-and-play operation
- Compatible PC control with user friendly, rich function software enables easy, convenient and operation. Spectrum collection, spectrum conversion, spectrum processing, spectrum analyzing, and spectrum output function etc. can be performed.
- Various special IR libraries are available for routine search. Users can also add and maintain the libraries or set up new libraries by themselves.
- Vibration isolated base plate
- Accessories such as Defused/Specular reflection, ATR, Liquid Cell, Gas Cell, and IR microscope etc. can be mounted in the sample compartment.
- Minimizes the effect of atmospheric water and interference.
- Facilitated with high longevity and stable interferometer
- Auto and manual subtraction of CO<sub>2</sub> and H<sub>2</sub>O absorption are available.
- Determination of both solid and liquid samples.

## Specifications :

- Spectral Range : 7800 to 375cm<sup>-1</sup>
- Resolution : Better than 0.85cm<sup>-1</sup> (Model 3000A)  
Better than 0.5cm<sup>-1</sup> (Model 3000B)
- Wavenumber Precision : ± 0.01cm<sup>-1</sup> at 2000 cm<sup>-1</sup>
- Wavenumber Accuracy : ±0.01cm<sup>-1</sup> at 2000 cm<sup>-1</sup>
- Wave number reproducibility : 0.05cm<sup>-1</sup>
- Scanning Speed : 5 - step adjustable for applications (16 scan/min)
- Signal to noise ratio(SNR) : better than 50,000:1 (RMS value, at 2100cm<sup>-1</sup>, resolution : 4cm<sup>-1</sup>, 1minute data collection)
- Detector : DTGS detector cover full range equipped with temperature control mechanism, Software Controlled detector selection
- Optics : Kinematically mounted, Zero alignment optics, with high reflectivity and low angle off axis design
- Desiccant : Long life desiccant system with software controlled desiccant status indicator with 20x10gm of Rechargeable Desiccant
- Beam Splitter : Ge coated Kbr (Optional: ZnSe beam splitter)
- Infrared Source : Air-cooled, high efficiency Reflex Sphere module (long life IR source)
- Data System : Compatible computer
- Software : FTIR software contains all routines needed for basic spectro meter operations, including library search, quantitation and spectrum export. A single software platform Containing interpretation, report builder, IR analysis, comparison, auto atmospheric correction, online data acquisition, baseline correction, smoothing and plot overlay. 21 CFR Part 11 complied software
- IR Library : Built in library with minimum 2500 Reference spectra for drugs.
- Dimensions : 54 x 52 x 26 cm
- Weight : 28 Kg
- Operation of Instrument : 220-240 V/ 50/60 Hz
- Operating temperature range : 5-45°C
- Humidity Range : 10-90%



## Accessories :

### Diffuse /Specular Reflectance Accessory

It is a versatile diffuse reflectance and specular reflectance accessory. Diffuse reflection mode is used for transparent and powder sample analysis. Specular reflection mode is for measuring smooth reflective surface and coating surface.

- High light throughput
- Easy operation, no internal adjustment needed
- Optical aberration compensation
- Small light spot, able to measure micro samples
- Variable angle of incidence
- Fast change of powder cup



### Horizontal ATR/Variable Angle ATR (30°~ 60°)

Horizontal ATR is suitable for the analysis of rubber, viscous liquid, large surface and pliable solids etc. Variable angle ATR is used for measurement of films, painting (coating) layers and gels etc.

- Easy installation and operation
- High light throughput
- Variable depth of IR penetration



### IR Microscope

- Micro samples analysis, minimum sample size: 100mm (DTGS detector) and 20mm (MCT detector)
- Translucent sample analysis
- Two measurement methods: transmission and reflection
- Easy sample preparation



### Single Reflection ATR

It provides high throughput when measuring materials with high absorption, such as polymer, rubber, lacquer, fiber etc.

- High throughput
- Easy operation and high analytical efficiency
- ZnSe, Diamond, AMTIR, Ge and Si Crystal plate can be selected according to application.



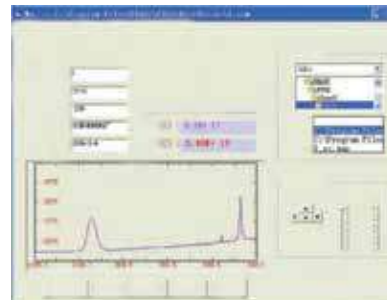
## Accessory for Determination of Hydroxyl in IR Quartz

- Fast, convenient and accurate measurement of Hydroxyl content in IR quartz
- Direct measurement to IR quartz tube, no need to cut samples
- Accuracy :  $\pm 1 \times 10^{-6}$  ( $\pm 1$  ppm)



## Accessory for Oxygen and Carbon in Silicon Crystal Determination

- Special silicon plate holder
- Automatic, fast and accurate measurement of oxygen and carbon in silicon crystal
- Lower detection limit :  $1.0 \times 10^{16} \text{ CM}^{-3}$  (at room temperature)

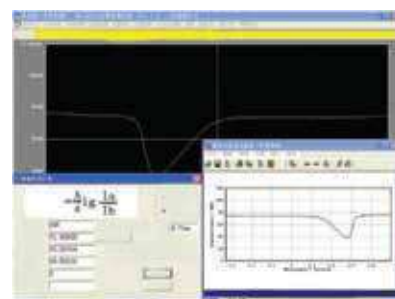


## SiO<sub>2</sub> Powder Dust Monitoring Accessory

- Special SiO<sub>2</sub> Powder Dust Monitoring software
- Fast and accurate measurement of SiO<sub>2</sub> Powder Dust

## Component Testing Accessory

- Fast and accurate measurement of the response of such components as MCT, InSb and PbS etc.
- Curve, peak wavelength, stop wavelength and D\* etc can be presented



## Optic Fiber testing Accessory

- Easy and accurate measurement of the loss rate of IR optic fiber, overcoming the difficulties for fiber testing, since they are very thin, with very small light passing holes and uneasy to fix.

## Jewelry Inspection Accessory

- Accurate identification of Jewelries.



## Universal Accessories

- Fixed liquid cells and demountable liquid cells
- Gas cells with different pathlength



**Analytical**®  
Technologies Limited

Analytical Group Companies  
Analytical Technologies Limited  
Analytical Bio-Technologies  
Analytical Bio- Med  
HPLC Solutions

Branch Office / Distributor

Corporate & Regd. Office :

Analytical House, # E67 & E68. Ravi Park, Opp., Sainath Park, Vasna Road, Baroda, Gujarat - 390 015. INDIA  
Tele : 0265-2253620 / 2252839 Fax : 0265-2254395 E-mail : info@hplctechnologies.com / info@ais-india.com  
Web : www.ais-india.com / www.analyticalgroup.net