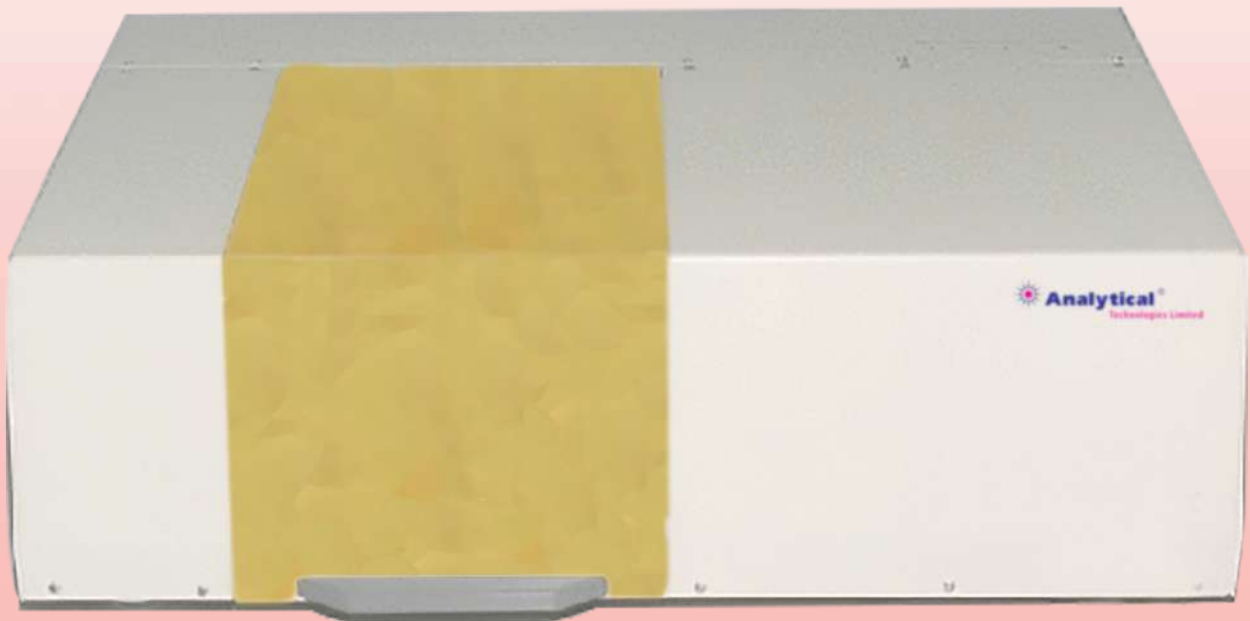


FTIR SPECTROMETER

Infra 3000X



EPC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

An ISO 9001 Certified Company

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► **Specifications :**

Wavelength range, IR	7800 to 350 cm ⁻¹
Wavelength range, NIR	14000-5800 or to 9000 - 3850 cm ⁻¹
Wavelength number precision	0.001cm ⁻¹
Wavelength number accuracy	0.05cm ⁻¹ /0.01cm ⁻¹
Resolution, standard	1 cm ⁻¹
Resolution, option	0.5cm ⁻¹
Interferometer	Corner Cube Michelson interferometer, gold coated optics, high throughput, DSP control with long life time >5 years
Beam diameter	30 mm.
Aperture ratio	f 3.2
Beamsplitter, standard IR	Multicoated KBr
Beamsplitter, option	Multicoated ZnSe
Beamsplitter, standard NIR	Fused Silica
Frequency reference	VCSEL laser
Emission port	Option
Sample compartment	W20xD26xH16 cm
Beam at sample	10 mm dia.
Accessories	Ordinary FTIR accessories
IR source	High intensity air cooled ceramic
NIR source	Quartz-halogen lamp
Detector, IR Standard	low noise DLATGS
Detector, IR Option	MCT
Detector, NIR	Si, InGaAs photodiode
Data acquisition system	18 bit, high speed
Signal to Noise ratio	50000:1/55000:1
Purge possibility	Yes
Operating system	Windows based
Interface	USB 2.0
Power	12VDC, 30 W
Dimensions	W59xD39xH19 cm
Weight	24 kg
Temp. environment	10 - 45 °C
Humidity environment	Best below 65%
Laser	Temperature controoled solid-state near -IR diode lase
Light Source	Long life ceramic source
Optical system	Michelson self-compensating optical system, Kinematically mounted, zero alignment optics
Mirrors	High reflectivity Gold coated optics incorporating low-angle off axis design

▶▶ **General :**

The Infra 3000X of FTIR spectrometers represent a low cost Fourier transform infrared spectrometers and employ a number of unique features that ensure high performance from a compact instrument.

The Infra 3000X measures just 59 X 39 X 19 cm and is regarded as one of compact and versatile infrared FTIR spectrophotometers. The design of the 200-X is unique both in terms of optical design and the software and firmware designed specifically to significantly reduce overall analytical times.

The interferometer geometry is employing a new compact Michelson self compensating optical system that eliminates many of the optical alignment problems found in conventional type optical interferometers.

The Infra 3000X design avoids the use of conventional corner cube optics and dynamic alignment. In practice this means that the instrument can be used in the research laboratory, in any university or college environment and if required, can also be used outside laboratory or in remote locations.

▶▶ **Performance :**

- Automated instrument tests for Instrumental and operational qualification (IQ; OQ)
- Automatic recognition and individual calibration of sample accessories and load of appropriate measurement parameters when changing the configuration
- Continuous monitoring of all spectrometer components, performance and humidity. Instrument performance tests include noise, ordinate, wavelength accuracy and the ASTM and EN method requirements
- Instrument must have Atmospheric Compensation to minimize effect of atmospheric water and CO₂. Humidity sensor must be inbuilt in the system to monitor humidity level in optical system.
- Internal validation unit (IVU) with reference standards for automated instrument tests of every setup and every measurement mode
- Validated software for the data acquisition, processing, evaluation and reporting of data in laboratory and is compliant with cGMP/GLP/GAMP regulations such as 21 CFR Part 11 and the 51 FDA data integrity guideline.
- The system have hardware and software provisions for FTIR method development and analysis as per ASTM D-7371 and EN 14078.

▶▶ **Interferometer Performance :**

All FTIR instruments offer high S:N ratios and can provide SNR up to 50000:1. Resolution in the infrared is available 1 cm⁻¹ and programmable up to 32 cm⁻¹ (option 0.5 cm⁻¹). The overall wavelength range is 7800 to 350cm⁻¹ (IR) or 14000 to 3000 cm⁻¹ (NIR)

▶▶ **The Sample Compartment :**

As you will see the sample compartment is large indeed and can accommodate all of the normal sample handling requirements relating to FTIR spectroscopy. This unique compartment will also accommodate the wide range of accessories supplied by specialist accessory manufacturers.

Overall dimensions are W20 X D26 X H16 cm. The optical axis is 74.5 mm above the base of the sample compartment and there is free space of 90 mm above the optical axis to the underside of the lid.

▶▶ **Extending Wavelength Ranges :**

In order to facilitate the use of more than one beam splitter or detector , provision has been made to interchange the beam splitter and detector assemblies allowing the Infra 3000X to be used at any wavelength from 14000 to 350 cm⁻¹.

Beam Splitters	Range subject to coatings
KBr	7800 to 350 cm ⁻¹
ZnSe	5000 to 600 cm ⁻¹
Fused silica	14000 to 3000 cm ⁻¹

▶▶ **Detector Options :**

The standard detector is a selected high sensitivity DLATGS pyroelectric design providing the highest possible signal to noise for all but the most demanding applications.

However there are many applications in infrared spectroscopy where high resolution analysis is required for materials with high absorption characteristics and for these applications cryogenically cooled MCT detector options are available each with a specific wavelength range.

In case of NIR spectral region two types of photodiodes are available: Si and InGaAs.

▶▶ **Software :**

For Windows software is supplied on CD and provided with each system shipped.

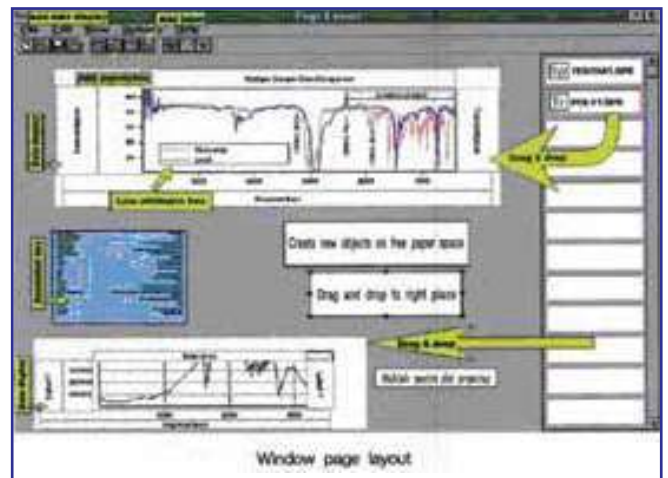
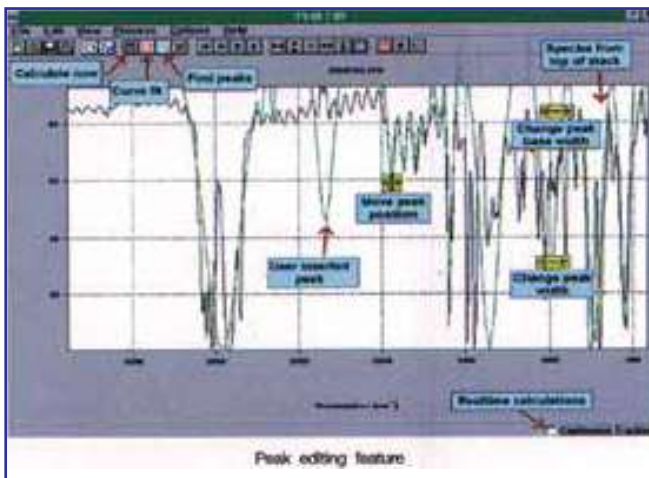
The software includes features for all standard analytical requirements including manipulation of spectral data, instrument control, plot with preview on the screen plus many others.

Also included are several facilities for analytical modelling of interferogrammes or spectra, with smoothing, and baseline correction, interactive editing and data manipulation.

Also spectral subtraction, mixture subtraction, smoothing derivatives, plot with preview etc. Data input and output is possible in ASCII or JCAMP. Other commercial programmes can be used like Essential FTIR or Panorama for features such as Library Search.

Our unique software has been designed specifically for multi function applications, it is easy to use and it is provided free of charge.

The utility of the Interspec for Windows programme can be extended by adding other commercial programmes such as search, component identification, Kramers Kronig Transform, Chemometrics, etc. to suit individual requirements.



▶▶ **Computer systems :**

There are no special computer requirements for the FTIR spectrometers. Computer options and performance change rapidly for both bench and lap top configurations. Computers have to meet at least the following minimum specifications:

Processor	Pentium 500 MHz
Memory	32 Mbytes RAM
Hard Disc	6.4 Gbytes
CD ROM	Yes

However other specifications are also possible subject to user requirements. The computer can be ordered as a separate component with the instrument or the instrument can be interfaced to an existing computer providing it meets the specifications as defined.

▶▶ **Sample Handling Accessories :**

The applications for FTIR are extensive and more use is being made of these techniques now than at any other time.

Many of these new applications can be attributed to the development of a very large and comprehensive range of sample handling accessories made available from many accessory companies. All such accessories can be used in the Infra 3000X of instruments.

So no matter what your sample is, we are able to offer just the right sample mount including accessories for ATR accessories, specular reflection, diffuse reflection, DRIFT, photo acoustic, liquid sampling, gas cells, gas purge systems, hydraulic or hand help sample presses, film making kits, sample grinders, micro sampling, disposable cells, polishing kits, polarisers, plus a lot more.

▶▶ **Air Cooled Infrared Source :**

Our Infrared source is a long lifetime and trouble free operation device. The reason is simple in that our design achieves excellent wavelength emission characteristics and very high stability. The colour temperature of the source is about 1150°C. In the NIR region a quartz-halogen lamp is used.

▶▶ **Desiccated and Sealed Interferometer :**

The Infra 3000X of instruments employ a sealed and desiccated interferometer and detector compartment, ensuring high spectral integrity with low levels of water vapour within the interferometer.

We also offer that employs a ZnSe moisture insensitive optics to be impervious to water vapour and can be used to advantage in serious tropical environment's. Provision is made for purging should this be of interest to the user.

Near infrared version employs a fused silica optics and is insensitive to any influence of water vapour.

▶▶ **HPLC Servicing, Validation, Trainings and Preventive Maintenance :**

- HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.
- Trainings :We also take up preventive maintenance to reduce downtime of HPLC’s Trainings.
- AMC’s/CMC : We offer user training both in-House and at customer sites on PLC principles, operations, troubleshooting.
- Validations : We have protocols for carrying out periodic Validations as per GLP/ GMP/U SFDA norms.
- Instruments : We offer instruments/Renting Services Modules like pumps, detector etc. on Rent.



▶▶ **About Analytical Technologies**

Analytical Technologies is synonymous for offering technologies for doing analysis and is the Fastest Growing Global Brand having presence in at least 96 countries across the globe. Analytical Technologies Limited is an ISO :9001 Certified Company engaged in Designing, Manufacturing, Marketing & providing Services for the Analytical, Chromatography, Spectroscopy, Bio Technology, Bio Medical, Clinical Diagnostics, Material Science & General Laboratory Instrumentation. Analytical Technologies, India has across the Country operations with at least 4 Regional Offices, 6 Branch Offices & Service Centers. Distributors & Channel partners worldwide.

▶▶ **Our Products & Technologies**

						
UV/VIS Spectro 2080+ Double Beam	Infra FTIR	Optima Gas Chromatograph 3007	Optima Gas Chromatograph 2979 Plus	Flash Chromatograph	Atomic Absorption Spectrophotometer	Liquid Partical Counter
						
Optical Emission Spectrophotometer	DSC/TGA	Semi Auto Bio Chemistry Analyzer	HEMA 2062 Hematology Analyzer	Micro Plate Reader/Washer	URINOVA 2800 Urine Analyzer	Total Organic Carbon 3800
						
Fully Automated CLIA	NOVA-2100 Chemistry Analyzer	PCR/Gradient PCR/ RTPCR	TOC Analyzer	Laser Particle Size Analyzer	Ion Chromatograph	Water purification system

▶▶ Regulatory compliances



▶▶ Corporate Social Responsibility

Analytical Foundation is a Nonprofit Organization (NGO) found for the purpose of:



Analytical Foundation

1. Research & Innovation Scientist's awards / QC Professional Award : Quality life is possible by innovation only and the innovation is possible by research only, hence ANALYTICAL FOUNDATION is committed to identify such personalities for their contributions across various field of Science and Technology and awarding them yearly. To participate for award, send us your details of research / testing / publication at info@analyticalfoundation.org

2. Improving quality of life by offering YOGA Training courses, Work shops / Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds, souls and body by means of Yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.

▶▶ Reach us @



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