



Portable FTIR-FTNIR Spectrometer Interspect 301-X With Open Optical Path



Portable FTIR/FTNIR Spectrometer Interspec 301-X With Open Optical Path



General

The Interspec 301-X series of FTIR portable spectrometers represent a low cost Fourier transform infrared and near infrared portable spectrometers and employ a number of unique features that ensure high performance from a compact instrument.

The Interspec 301-X measures just 49 X 39 X 20 cm and is regarded as one of compact and versatile infrared FTIR spectrophotometers. The design of the 301-X is unique both in terms of optical design and the software and firmware designed specifically to significantly reduce overall analytical times.

The optical 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 Interspec 301-X 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.

Interferometer Performance

All Interspec FTIR instruments offer high S:N ratios and can provide SNR up to 12000:1. Resolution in the infrared is available 2 cm^{-1} and programmable up to 32 cm^{-1} (option 0.5 and 1 cm^{-1}). The overall wavelength range is 7000 to 400 cm^{-1} (IR) or 15000 to 3850 cm^{-1} (NIR).

The Sample Compartment

The sample compartment is using open optical path geometry. The height of the optical axis above the baseplate is 63.5 mm. This open sample compartment is 200 mm wide and can accommodate practically all of accessories supplied by specialist accessory manufacturers.



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 Interspec 300-X to be used at any wavelength from 15000 to 400 cm^{-1} .

Beam Splitters	Range subject to coatings
KBr	7,000 to 400 cm^{-1}
ZnSe	5,000 to 500 cm^{-1}
CaF ₂	10,000 to 1,000 cm^{-1}
Quartz	15,000 to 3,000 cm^{-1}

Detector Options

The standard IR 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.



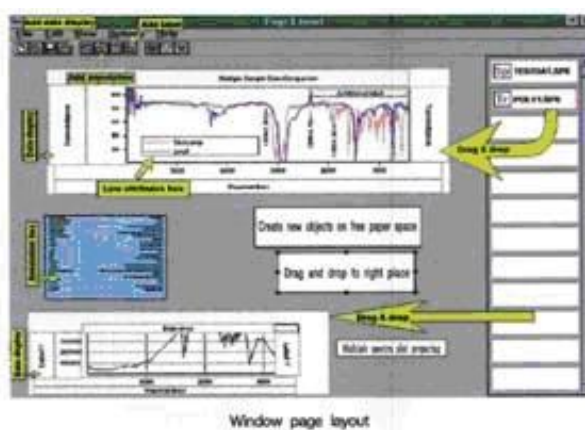
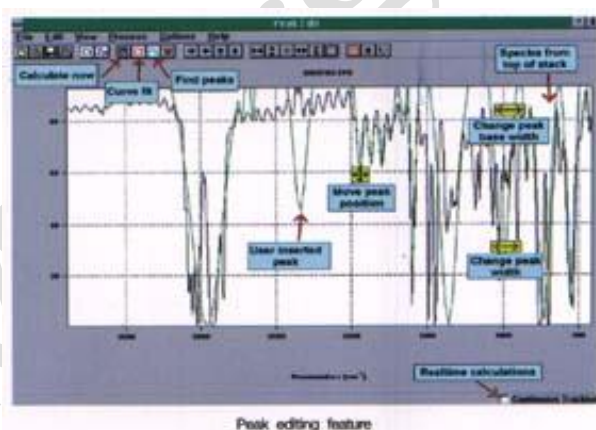
Software

Interspec 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 including Thermo/Galactic GRAMS for features such as Library Search.

The Interspec for Windows programme is written in 32 bit protected mode. 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.





Specifications

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Wavelength range, IR	7000 to 400 cm ⁻¹ (without ATR accessory)
Resolution, standard	1 cm ⁻¹
Resolution, option	0.5 cm ⁻¹
Interferometer	Pendulum roof mirror type
Beam diameter	30 mm
Aperture ratio	f 3.2
Beamsplitter, standard IR	Multicoated KBr
Beamsplitter, option	ZnSe
Frequency reference	VCSEL /HeNe laser
Sample chamber	Open architecture, optical axis 63.5 mm above the baseplate, wide 200 mm
Accessories	compatible with all of your favorite accessories
Beam at sample	10 mm dia.
IR source	High intensity air cooled ceramic
Detector	low noise DLATGS
Data acquisition system	18 bit, high speed
Dessiccant possibility	Yes
Operating system	Windows based
Interface	USB 2.0
Power	12 VDC, 30 W
Dimensions	W49xD39xH20 cm
Weight	18 kg
Temp. environment	15 – 28 °C
Humidity environment	Best below 65%