640-IR

FT-IR SPECTROMETER

Introduction

Varian FT-IR spectrometers are manufactured according to a quality management system certified to ISO 9001.

Design Overview

The Varian 640-IR is a 'fit-for-purpose', high-performance spectrometer designed to make FT-IR spectroscopy easy. With a range of unique, easy to use hardware and software features, it allows even novice users to quickly become productive. It is available in mid-IR or near-IR configurations and is suited to QA/QC applications identification and verification analyses, and is an ideal educational tool.

The Varian 640-IR spectrometer design is based on a 38 mm dynamically aligned, 60° mechanical bearing Michelson interferometer and comes standard with 0.18 cm^{-1} resolution. It includes a revolutionary air-cooled source for delivering optimum power to the sample.

The Varian 640-IR is compatible with a wide range of accessories. These include single-point microscopy and microscopy imaging, macro imaging, patented ATR imaging[1], and hyphenated techniques such as TGA-IR.

General performance specifications	
Interferometer type	38 mm dynamically aligned, 60° mechanical bearing Michelson
Spectral range **Standard** **Optional**	 Mid IR Near IR
Spectral resolution (cm^{-1}) **Unapodized** **Optical**	 < 0.18 < 0.25
Signal-to-noise ratio[2] **5 second**	 6,000:1 p-p (absorbance = 7.2 x 10^{-5})
Spectrometer enclosure **Standard** **Optional**	 Sealed and dessicated Tropical (moisture-resistant windows)
A/D converter dynamic range	Delta-Sigma (24 bits)
Spectrometer interface	USB 2
External ports	3 (left, right and rear emission)

1. United States Patent 6,141,100; British Patent 2,329,977B; Japanese Patent 03076013B2. Patent applied for in Germany, Application Number 19836758A1.
2. Measured as peak-to-peak, under a standard configuration with 4 cm^{-1} spectral resolution

Dimensions and weights	
Sample compartment dimensions (Width x depth x height)	23.2 x 27.6 x 15.4 cm (9.1 x 10.9 x 6.1 in.)
Spectrometer dimensions (Width x depth x height)	70.8 x 75.6 x 34.4 cm (27.9 x 29.8 x 13.5 in.)
Weight	80 kg (176 pounds)

Standard system configurations[1]	Range (cm^{-1})[2]	Source(s)	Beamsplitter(s)	Detector(s)
Mid-IR	7,900–375	Ceramic	Optimized KBr	Cooled DLaTGS
Near-IR	11,000 - 2,000	Tungsten-halogen	NIR quartz	PbSe

Major accessories	
The Varian 640-IR is compatible with sample compartment accessories from all major accessory manufacturers and uses Accessory Recognition Technology (ART).	
Varian 610-IR Microscope	Varian Large Sample (LS) accessory for macro imaging
Varian 620-IR Microscope	Thermogravimetric analysis/FT-IR (TGA-IR) accessory

Varian customer support policies	
Warranty	12 months, though this may vary according to locations.
Hardware support period	Five (5) years from date of last unit manufacture. After this time, parts and supplies will be provided if available.
Software support	Software upgrades to fix non-conformances or safety problems will be issued free of charge. Software upgrades to add additional functionality will attract a fee.

Further details	
	For further details on the following: • PC configurations • Analytical Instrument Qualifications (AIQ) • Accessory specifications and application information • Part numbers and other ordering information Please consult your Varian office or supplier, or our Web site at www.varianinc.com

1. Other configurations may be available.
2. This represents only an approximate range based on the configuration of components shown in the table. Other combinations of components may alter this range.

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