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610/620-IR

FT-IR MICROSCOPY AND IMAGING

Introduction

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

Design Overview

Varian's infrared microscopy and spectrochemical imaging products represent the latest in a long list of commercial 'firsts'. Building on the world-renowned performance of the Varian 600 UMA microscope, the Varian 610-IR and 620-IR microscopes deliver improved optical throughput with maximum flexibility to meet applications ranging from routine measurements to cutting-edge research. The unique all-reflective infinity-corrected design ensures maximum energy throughput, delivering unrivalled sensitivity.

The Varian 610-IR microscope consists of a single point detector, with a dual detector option, while the Varian 620-IR microscope has a Focal Plane Array (FPA)¹ detector used for spectrochemical imaging, allowing the simultaneous collection of hundreds to thousands of FT-IR spectra in seconds.

The Varian 610-IR and 620-IR microscopes can be attached to all Varian 600-IR series spectrometers. These include the entry-level Varian 640-IR, the mid-range research Varian 660-IR, and the top of the range air bearing Varian 670-IR and 680-IR spectrometers. The performance of the microscope varies depending on the spectrometer and options selected. Performance specifications for the most common configurations are listed below.

	Varian 610-IR	Varian 620-IR
General performance specifications		
Microscope type	All reflective, infinity-corrected	
Viewing options		
Standard	Internal visible CCD camera and fixed binocular	
Optional	Tilttable binocular	
Aperture		
Standard	Motorized, continuously variable knife edge 'view-thru' sample aperture	
Optional	Motorized, continuously variable knife edge opaque sample aperture for NIR	
IR objectives		
Standard	Collection objective: 15x all-reflecting on-axis Schwarzschild objective (NA=0.5), Condenser objective: as per collection objective with independent vertical motion to compensate for sample or substrate thickness	
Optional	Grazing angle objective, slide-on ATR (Ge, diamond and Si), large sample objective	
Visible objectives		
Standard	4x glass	
Optional	10x visible objective (6 mm working distance), 20x visible objective (3 mm working distance), 40x visible objective (0.63 mm working distance), 4x dark field visible condenser	

1. This product is regulated by the U.S. Department of State under the International Traffic in Arms Regulations, 22 CFR 120-130 (ITAR). An export license from the U.S. government is therefore required to export this product from the United States, and other ITAR restrictions apply to the shipment, use, service and other aspects of this product and the FT-IR instrument in which it is used.

610/620-IR

Varian 610-IR

Varian 620-IR

General performance specifications (continued)		
	Stage Standard Optional	Manual Motorized 126 x 76 mm travel, 1 µm step size
	Binocular eyepiece Standard Optional	10x 20x
	Illumination	Ultra-high brightness white LED
	Purge	Sealed microscope with objective and condensor purge collars for maximum purge efficiency
	Control panel functions at microscope	Initiation of signal monitoring, background and sample scans, rotation and opening/closing of motorized apertures, visible image capture, illumination brightness control, selection of transmission/reflection mode, switching between visible or IR view modes
	Ability to upgrade	Yes, to Varian 620-IR N/A
Detectors		
	Single point Standard Optional (dual or single)	250 µm narrow band MCT Narrow, medium and wide MCTs in 100 or 250 µm element sizes Indium antimonide (InSb), 250 µm, silicon
	Chemical imaging Mid-IR	Upgrade to Varian 620-IR required 16 x 16 Mid-IR MCT FPA 32 x 32 Mid-IR MCT FPA 64 x 64 Mid-IR MCT FPA 128 x 128 Mid-IR MCT FPA 128 x 128 Near-IR InSb FPA
	Near-IR	
	Chemical imaging IR field-expanding optics (FEO) FEO's double the FOV to provide 4 times the area covered	Upgrade to Varian 620-IR required Yes (std)
	Detector changeover	Automatic software controlled
Dimensions and weights		
	Microscope dimensions (Width x depth x height)	39.6 x 68.9 x 66.8 cm (15.6 x 27.1 x 26.3 in.) 39.6 x 76.3 x 66.8 cm (15.6 x 30.0 x 26.3 in.)
	Weight	50 kg (110 pounds) 50 kg (110 pounds)
Major accessories		
The Varian 610/620-IR Microscopes are compatible with a wide range of accessories. Contact your local Varian office for further information.		
Varian Large Sample (LS) accessory for macro chemical imaging		Exclusive Specac Imaging Golden Gate™ for macro ATR imaging
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	

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