IRT-5000/7000 Series

Infrared Microscope

Model IRT-5100
Infrared Microscope

Model IRT-5200
Infrared Microscope

Model IRT-7100
Fully automated Infrared Microscope

Model IRT-7200
Multi-channel Infrared Microscope

JASCO

Unparalleled performance, flexibility and ease of use

Advanced FT-IR Microscopes

Micro FT-IR has generally been reserved for measuring specified samples such as small contaminants on polymer films or micro samples transferred to infrared transparent windows. Today, JASCO' s innovative FT-IR Microscopes, the IRT-5000/7000 Series, provide new functions that dramatically improve infrared micro-spectroscopy analyses. These microscope systems can be easily interfaced with the FT/IR-4000 or FT/IR-6000 series spectrometers, offering the most advanced microscopy and imaging systems available in the market. Coupling JASCO' s proven technology for infrared spectroscopy, accumulated over 50 years, with the most advanced optical design, the IRT-5000/7000 Series offer the best solution for even the most challenging sample analyses.

IRT-5100

FT-IR Microscope

Manual sample stage
DLATGS detector

The IRT-5100 is a general purpose FT-IR microscope employing a standard DLATGS detector with no need for liquid nitrogen cooling. The IRT-5100 can also integrate an additional detector which can be simultaneously installed. An optional automatic XYZ sample stage provides auto-focus and mapping analysis capabilities.

- *Dual detector capability*
- *Variety of measurement modes (Transmission, reflection, ATR, Grazing Angle Reflection)*
- *Multiple objective capabilities*
- *Optional automatic sample stage*

IRT-5200

FT-IR Microscope

Manual sample stage
Mid-band MCT detector

The IRT-5200 FT-IR microscope utilizes a standard mid-band MCT detector, while up to two detectors can be simultaneously installed as an option. The standard "IQ Mapping" function allows multi-point, line, area and ATR mapping experiments without moving the sample stage, in addition to single-point measurements. An optional automatic XYZ sample stage enables auto-focus and mapping analysis of larger sample areas.

- *IQ Mapping*
- *Dual detector capability*
- *Variety of measurement modes (Transmission, reflection, ATR, Grazing Angle Reflection)*
- *Multiple objective capabilities*
- *Field upgrade to IR Imaging System using a linear array detector*

IRT-7100

Fully Automated FT-IR Microscope

Automatic sample stage
Mid-band MCT detector

The IRT-7100 fully automated FT-IR microscope includes a standard mid-band MCT detector, with an option to simultaneously install up to two detectors. It is easily field-upgradable to an IR imaging system by adding an optional linear array detector. The standard automatic sample stage provides wide area mapping and multi-ATR mapping by combining the "IQ Mapping" function with the XYZ auto-stage.

- *Fully automated sample stage with auto focus function as standard*
- *IQ Mapping*
- *Up to four objectives*
- *Dual detector capability*
- *Field upgrade to IR Imaging System using a linear array detector*

IRT-7200

Multi-channel FT-IR Microscope

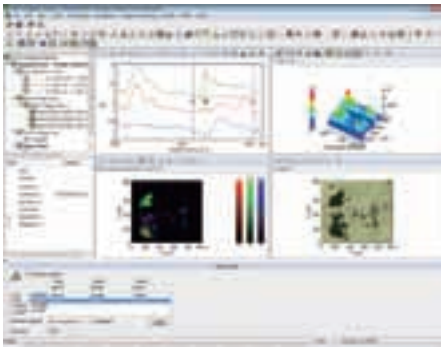
Automatic sample stage
Mid-band MCT detector
and linear array detector

The IRT-7200 FT-IR multi-channel microscope offers two detectors as standard, a 16-channel linear array detector and a single-point mid-band MCT detector. The combination of the standard automatic sample stage and "IQ Mapping" function allows mapping analyses of a larger sample area, multi-area ATR mapping, and IR imaging of a specified area with extremely high spatial resolution and excellent sensitivity in a short time.

- *Full IR Imaging function*
- *IQ Mapping*
- *Up to four objectives*
- *Wide area mapping and multi-ATR imaging*
- *Dynamic Imaging with FT-IR step-scan option*
- *Multivariate analysis PCA (Principal Component Analysis) as standard*

User-friendly Micro Analysis Measurement Program

A full-featured software package, Spectra Manager™ II provides automatic functions and simplified operational procedures to minimize manual operations. Measurement conditions, microscope sample monitoring/control operations and measurement results can be reviewed in a single screen. The dedicated microscope interface provides various types of measurements such as single and multiple points, mapping, and linear array measurements using a single mouse-click for mode selection. Real time monitoring of the spectrum and a calculated chemical image can be specified during the mapping measurement.

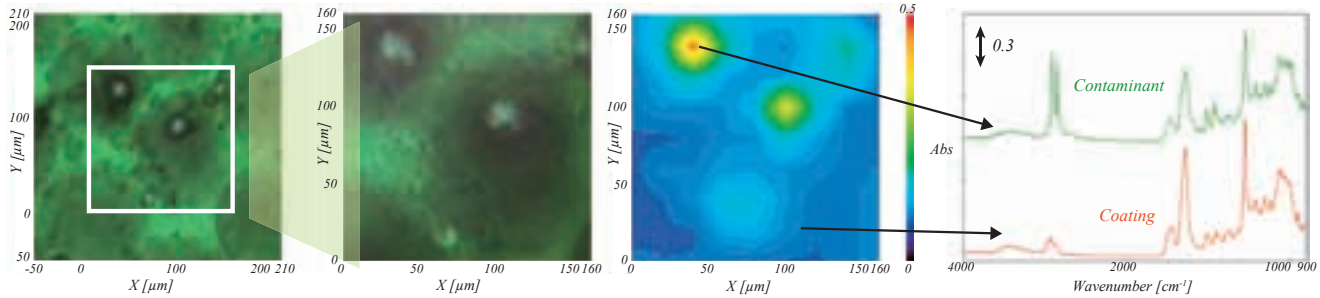


Innovative ATR Mapping

The "Clear-View" ATR objectives enable a simultaneous sample view even during ATR data collection after the ATR crystal element contacts the sample. The IQ Mapping function enables automated multi-point mapping, line mapping, grid mapping and IR Imaging analyses of a microscopic area with a manual sample stage and a single element detector.

IQ Mapping coupled with a "Clear-View" ATR objective allows ATR mapping and ATR Imaging of any sample in contact with the ATR objective without moving the sample stage or ATR objective, while observing the entire area of the sample that is in contact with the crystal element. This function provides high-speed and cross-contaminant free measurements of a small sampling area.

Contaminant analysis on coatings



Sample image before contact of the crystal | *Sample image after contact of the crystal* | *Chemical imaging* | *Spectra*

Full-vacuum System

For FT-IR measurement, absorption peaks due to atmospheric water vapor and CO_2 can make it difficult to obtain high quality sample spectra. The most effective solution to this problem is the measurement of samples in vacuum. As a factory option, a vacuum type FT-IR microscope system can be provided.

IRT-7200VC with FT/IR-6800FV

Specifications

		IRT-5100	IRT-5200	IRT-7100	IRT-7200
Principle		FT-IR microscope with cassegrain optical system			
Measurement method		Transmittance / Reflectance measurement			
Standard detector		DLATGS detector (7800 - 400 cm^{-1})	Single mid-band MCT (7800 - 600 cm^{-1})		Linear array MCT (7000 - 650 cm^{-1}, 1 × 16 element) Single mid-band MCT (7800 - 600 cm^{-1})
Detector exchange		Dual detector capability (software controlled), user exchangeable single element detectors are available as an option.			
Optional detectors	Single element detector	Narrow-band MCT (5000 - 750 cm^{-1}) Mid-band MCT (7800 - 600 cm^{-1}) Wide-band MCT (7800 - 450 cm^{-1}) InSb (15000 - 1850 cm^{-1}) InGaAs (12000 - 4000 cm^{-1})	Narrow-band MCT (5000 - 750 cm^{-1}) Wide-band MCT (7800 - 450 cm^{-1}) DLATGS (7800 - 400 cm^{-1}) InSb (15000 - 1850 cm^{-1}) InGaAs (12000 - 4000 cm^{-1})		
	Linear array detector	-	MCT (7000 - 650 cm^{-1}, 1 × 16 element) MCT (7000 - 650 cm^{-1}, 2 × 16 element) InSb (10000 - 1900 cm^{-1}, 1 × 16 element) InGaAs (10000 - 5000 cm^{-1}, 1 × 16 element)		MCT (7000 - 650 cm^{-1}, 2 × 16 element) InSb (10000 - 1900 cm^{-1}, 1 × 16 element) InGaAs (10000 - 5000 cm^{-1}, 1 × 16 element)
S/N ratio	Single element detector	1000:1 (Aperture size 300 μm^2, resolution 4 cm^{-1}, 1 min. acquisition, near 2200 cm^{-1}, p-p)	8000:1 (Aperture size 100 μm^2, resolution 4 cm^{-1}, 1 min. acquisition, near 2200 cm^{-1}, p-p)		
	Linear array detector	-			1500:1 (Aperture size 12.5 μm^2, resolution 16 cm^{-1}, 1 min. acquisition, near 2200 cm^{-1}, p-p)
Microscope objectives		Cassegrain: 16×, 32× or 10× Automatic objective recognition function (standard) Up to four objectives can be selected by the software.			Cassegrain: 16× and 32× as standard, 10× as option Automatic objective recognition function (standard) Up to four objectives can be selected by the software.
Condenser mirror		Cassegrain: 16×, 32× or 10× (manual exchange) Automatic condenser mirror recognition function (standard)			Cassegrain: 16×, 32× as standard (manual exchange), 10× as option
Condenser mirror compensation		Standard auto-compensation function			
Aperture		PC-controlled vertical/horizontal adjustment and angle of rotation			
Sample stage	Standard	Manual stage with fine adjustment (Movable distance: X: 70, Y: 50, Z: 20 mm)		Auto XYZ stage with auto-focus function (Movable distance X: 100, Y: 75, Z: 25 mm, 1 µm step)	
	Option	Auto XYZ stage with auto-focus function (Movable distance X: 100, Y: 75, Z: 25 mm, 1 µm step) Joystick for auto XYZ stage control		Joystick for auto XYZ stage control	
Auto focus		Option		Standard	
IQ mapping		-	Standard		
Sample observation		High resolution, 3 Megapixel CMOS camera with a 3X optical zoom function (standard) IQ Monitor (simultaneous sample measurement and observation) and auto illumination function (standard) 5.7 inch integrated color LCD display (option), Binocular (option)			
Observation options		Visible polarization observation, Differential interference contrast observation, Fluorescence observation, Refractive objectives (10×, 20×)			
ATR measurement (option)		"Clear-View" ATR objective (ATR-5000-SS/SD/SG)*1, conventional ATR objective (ATR-5000-D/Z/G)*1, Stage-mounted micro ATR using transmittance light path (ATR-5000-TPZ)			
Grazing angle measurement (option)		Cassegrain grazing angle objective (RAS-5000)*2			
Purge		Sample area purge case is available as an option.			
Integrated control panel		Transmittance/Reflectance switching with indicator; detector indicator; objective selection/indicator; open/close and rotation of aperture; auto-compensation of condenser mirror; visible illumination adjustment			
Dimension and weight		587 (H) × 302 (W) × 695 (D) mm, 54 kg		613 (H) ×302 (W) × 695 (D) mm, 56 kg	
Power consumption		AC 100 - 240 V, 50/60 Hz, max. 60 VA		AC 100 - 240 V, 50/60 Hz, max. 75 VA	

*1 Pressure sensor (PRS-M-5000, PRS-A-5000) is required.
*2 Infrared polarizer (PL-IR-5000, PL-IR-7000) is required.

JASCO INTERNATIONAL CO., LTD.
11-10, Myojin-cho 1-chome, Hachioji, Tokyo 192-0046, Japan
Tel: +81-42-649-3247 Fax: +81-42-649-3518 http://www.jascoint.co.jp/english/
Australia, China, Hong Kong, India, Indonesia, Korea, Malaysia, New Zealand, Pakistan, Philippines, Russia, Singapore, Taiwan, Thailand

JASCO INCORPORATED
28600 Mary's Court, Easton, MD 21601, U.S.A
Tel: +1-800-333-5272 +1-410-822-1220 Fax: +1-410-822-7526 http://www.jascoinc.com
U.S.A., Canada, Costa Rica, Mexico, Puerto Rico, Argentina, Brazil, Chile, Colombia, Paraguay, Peru, Uruguay, Guatemala, Ecuador, Bolivia

JASCO EUROPE s.r.l.
Via Luigi Cadorna 1, 23894 Cremella (Lc), Italy
Tel: +39-039-9215811 Fax: +39-039-9215835 http://www.jasco-europe.com
JASCO Deutschland www.jasco.de, **JASCO UK** www.jasco.co.uk,
JASCO France www.jascofrance.fr, **JASCO Benelux** www.jasco.nl,
JASCO Spain www.jasco-spain.com
Italy, Germany, U.K., France, Netherlands, Belgium, Luxembourg, Spain, Sweden, Norway, Denmark, Austria, Finland, Greece, Hungary, Poland, Portugal, Romania, Switzerland, Algeria, Cyprus, Egypt, Israel, Jordan, Kuwait, Lebanon, Morocco, Saudi Arabia, South Africa, Tunisia, Turkey, U.A.E., Yemen

For more information, please contact:

LIRT-1311-P-R1 Printed in Japan

Products described herein are designed and manufactured by ISO-certified JASCO Corporation.

MADE IN TOKYO, JAPAN