

New Generation FT-IR Microscope

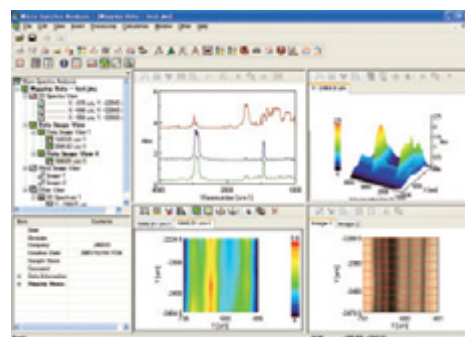
for the JASCO FT/IR-4000/6000 Series

IRT-5000



JASCO has developed the IRT-5000, an innovative FT-IR microscope accessory with advanced functionality which drastically improves the ability to obtain micro-spectroscopic data. The IRT-5000 FT-IR Microscope employs a mid-band MCT detector as standard, while up to two detectors can be installed simultaneously to expand the spectral range of the microscope. 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 X-Y-Z sample stage enables auto-focus and mapping analysis of a large sample area. With the addition of a linear array detector, the microscope can be easily upgraded for IR imaging in the field.

- IQ Mapping without moving sample stage
- Dual detector capability and user replaceable detectors
- Multiple objective capability and automatic switching
- Exceptional visual observation quality
- IQ Monitoring for simultaneous observation of the spectrum and sample image
- Spectrum preview to check conditions before measurement
- Data storage linked with sample image and aperture information



Specifications	
Principle	FT-IR microscope with cassegrain optical system
FT-IR main unit	Compatible with FT/IR-4000 / 6000 Series spectrometers
Measurement method	Transmittance / Reflectance measurement
Wavenumber range	7800 to 650 cm ⁻¹ (Expandable to 15,000 to 400 cm ⁻¹)
Minimum sampling area	5 × 5 μm (with 32X cassegrain)
Detector	Mid-band MCT detector (7800-650 cm ⁻¹) (standard) Dual detector capability (Software controlled) User exchangeable detectors are optional.
Optional detectors:	Single element detectors - Narrow-band: MCT detector (7800-750 cm⁻¹) - Wide-band: MCT detector (7800-450 cm⁻¹) - DLATGS detector (7800-400 cm⁻¹) - InSb detector: (15000-1850 cm⁻¹) - InGaAs detector: (12000-4000 cm⁻¹) Linear array detectors (Upgrade kit is required.) - Linear array detector: MCT(7000-750 cm⁻¹) (1 × 16 element) - Linear array InSb detector: (10000-1900 cm⁻¹) (1 × 16 element) - Linear array InGaAs detector: (10000-5000 cm⁻¹) (1 × 16 element)
S/N ratio	5000:1 (Aperture size 100 μm, resolution 4 cm ⁻¹ , 1 minute acquisition, near 2200 cm ⁻¹)
Sample observation	High-resolution CMOS camera, 1.3 million pixels with a 3X optical zoom function (standard) IQ Monitor (simultaneous sample measurement and observation) and auto illumination functions are standard. 5.7 inch integrated color LCD display and binocular are optional with ATOS (Aperture Through Optical System).
Observation options	Visible polarization observation, Differential interference observation, Fluorescence observation Refractive objectives: 10X, 20X (Option)
Microscope objectives	Cassegrain 16X - standard; 10X, 32X - optional Automatic objective recognition function is standard. Up to four objectives can be selected by the software.
Micro ATR objective options	- Selection of ATR crystals of ZnSe, Ge, and diamond (Optional pressure sensor is required.) - Removable prism with Ge crystal for sample observation (Optional pressure sensor is required.) - Stage-mounted with ZnSe crystal using transmittance light path (TPZ-ATR)
Grazing angle options	Cassegrain grazing angle objective Optional IR polarizer for enhanced capabilities
Condenser mirror	Cassegrain 16X - standard; 10X, 32X - optional (manual exchange)
Condenser mirror compensation	Standard auto-compensation function
Aperture	PC-controlled vertical/horizontal adjustment and angle of rotation
Sample stage	Manual stage with fine adjustment (standard), Movable distance: X: 50, Y: 70, Z: 20 mm
Optional auto XYZ stage	- Auto XYZ stage, with Auto-focus function - Movable distance: X: 100, Y: 75, Z: 25mm (1 μm step), Sample weight: 5 kg (Max), 500 g (normal) - Joy stick option for XYZ auto-stage control
Purge	Sample area purge case is optional.
Full Vacuum	Factory option
Integrated control panel	Transmittance/ Reflection switching with indicator; detector switching with indicator; objective selection/indicator; open/close and rotation of aperture; auto-compensation of condenser mirror
Dimension	587 mm (H) × 302 mm (W) × 695 mm (D)
Weight	54 kg
Power input voltage	AC100 - 240 V, 50/60 Hz
Power consumption	70 VA

Standard Function	
IQ Mapping function	Mapping measurement without moving the stage, ATR mapping*, Line mapping, Multi-point measurement
Auto XYZ stage control (with optional auto-stage)	Stage control, Centering, Area Mapping, ATR Mapping*, Line Mapping, Multi-point measurement (up to 100 points), Auto-focus, pressure sensor for ATR (option), multi-ATR mapping*
Multi-image (with optional auto-stage)	The sample image of a large area is displayed by concatenating multiple CCD images. (The max. area is the movable range of the auto-stage) Measurement area set on the sample image view
Real-time display during the imaging measurement	Displays the spectrum, the imaging map of the intensity at a specified wavenumber and the measurement point on the microscope image
Data processing	Peak height/ratio, peak area/ratio, peak shift, FWHH
Image view	Color 3D, Bird's eye, Contour, Color image, 3D, 2D, RGB and overlay views

Optional program	
Secondary Structure Estimation	Available option (Analysis of the mapping data.)
PCA Mapping	Available option (Analysis of the mapping data.)

* ATR mapping is available with ATR objective only. Mapping software for the TPZ is an option. (Auto XYZ stage only)

Ordering Information

Microscope

IRT-5000-16	IRT-5000 Infrared Microscope, 16X Cassegrain
IRT-5000-32	IRT-5000 Infrared Microscope, 32X Cassegrain
IRT-5000-10	IRT-5000 Infrared Microscope, 10X Cassegrain

Upgrade Kit

UPG-5000	IRT-5000 Upgrade kit to IRT-7000
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Microscope Options

6926-J103A	IPS-5000	XYZ Auto stage
6926-J104A	JOY-IPS-5000	Joystick for XYZ Auto stage
6926-J105A	LCD-5000	Color LCD Monitor, 5.7 inch with built-in ATOS
6926-J106A	VIS-5000	Binocular with 10X objective

Optional Detectors (Built-in)

6926-J130A	TGS-5000	DLATGS detector for IRT-5000, range: 7800 - 400 cm^{-1}
6926-J131A	NMCT-5000	N-MCT detector for IRT-5000, range: 7800 - 750 cm^{-1}
6926-J132A	WMCT-5000	W-MCT detector for IRT-5000, range: 7800 - 450 cm^{-1}
6926-J133A	INSB-5000	InSb detector for IRT-5000, range: 15000 - 1850 cm^{-1}
6926-J134A	IGA-5000	InGaAs detector for IRT-5000, range: 12000 - 4000 cm^{-1}

Optional Detectors (User Exchangeable) (Modification of the microscope by SDC-5000 is required.)

6926-J137A	TGS-5000C	DLATGS detector for IRT-5000, user exchangeable, with cassette, range: 7800 - 400 cm^{-1}
6926-J138A	NMCT-5000C	N-MCT detector for IRT-5000, user exchangeable, with cassette, range: 7800 - 750 cm^{-1}
6926-J139A	WMCT-5000C	W-MCT detector for IRT-5000, user exchangeable, with cassette, range: 7800 - 450 cm^{-1}
6926-J140A	INSB-5000C	InSb detector for IRT-5000, user exchangeable, with cassette, range: 15000 - 1850 cm^{-1}
6926-J141A	IGA-5000C	InGaAs detector for IRT-5000, user exchangeable, with cassette, range: 12000 - 4000 cm^{-1}

6926-J135A	SDC-5000	Modification kit for detector exchange for IRT-5000
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Micro ATR Objectives

6926-J120A	ATR-5000-Z	ATR Objective with ZnSe prism
6926-J121A	ATR-5000-G	ATR Objective with Ge prism
6926-J122A	ATR-5000-D	ATR Objective with Diamond prism
6926-J119A	ATR-5000-VG	ATR Objective with Ge prism, prism slide type
6926-J123A	ATR-5000-G45	ATR Objective with Ge prism, projection type
6926-J126A	OSP-5000	ATR Objective sensor plate for objectives, ATR-30-Z/G/D/G45

6926-J107A	PRS-A-5000	Pressure sensor for ATR objective for XYZ Auto stage
6926-J108A	PRS-M-5000	Pressure sensor for ATR objective for XYZ Manual stage

6926-J124A	ATR-5000-TPZ	Transmittance ATR (without crystal)
6584-J341A	PKT-ZNSE	Crystal kit, ZnSe for ATR-5000-TPZ
6584-J342A	PKT-ZNS	Crystal kit, ZnS for ATR-5000-TPZ

Micro Grazing Angle Reflection Objective

6926-J125A	Grazing angle objective
6926-J109A	Infrared polarizer

Sample Observation Options

6926-J114A	DIC-5000	Differential interference contrast observation
6926-J127A	OBJ-5000-10	10X Refractive objective lens
6926-J128A	OBJ-5000-20	20X Refractive objective lens
6926-J111A	PL-E-5000	Visible polarizer
6926-J113A	PL-E-5000VIS	Visible polarizer for binocular
6926-J115A	MF-5000VIS	Fluorescence observation (700 - 400 nm)
6926-J116A	MF-5000UV	Fluorescence observation (700 - 250 nm)

Purge

6926-J117A	PGC-5000	Purge case for IRT-5000
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Standard Micro Sampling Kit

0501-0511	Micro FT/IR sampling kit (Standard for IRT-5000)
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SliceMaster

0507-8061	HS-1	Vertical slicer, SliceMaster
0507-8062	HK-1	Angled slicer, SliceMaster
0507-8069	HW-1	Multi-angle slicer, SliceMaster



Color LCD Monitor



Binocular



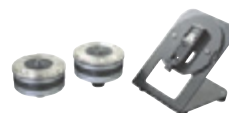
XYZ Auto Stage



Joystick for XYZ Auto Stage



Detectors



ATR Accessories



Pressure Sensor



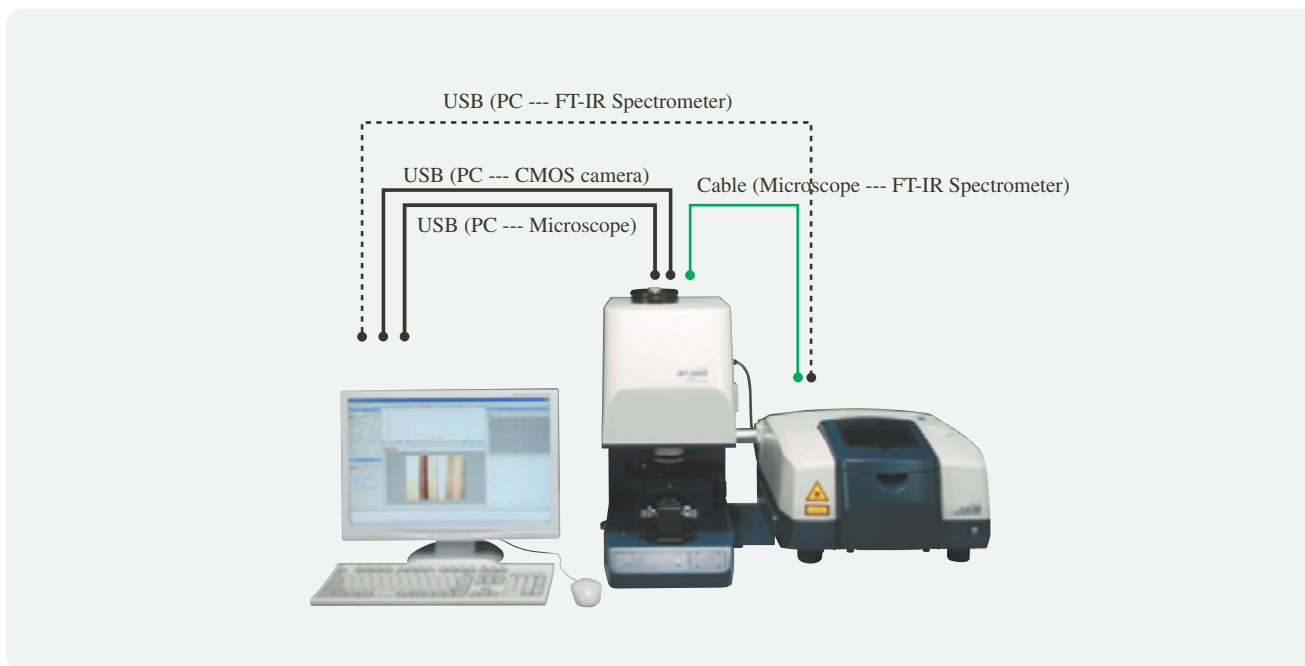
Micro FT/IR Sampling



SliceMaster

Standard Composition

Description	Quantity
IRT-5000 Microscope including - Objective cassegrain (16X, 32X, or 10X) - Condenser cassegrain (16X, 32X, or 10X) - MCT detector - CMOS camera - Manual stage	1 set
Spectra Manager installation disk	1 pc.
Instruction Manual	1 copy
Sample plate	1 pc.
Micro-sampling kit consisting of - Micro sampling knife S-type - Micro sampling knife H-type - Micro-needle for sample manipulation - Tweezers for micro sampling	1 set
USB cable	2 pcs.
Cable between FT-IR and IR microscope	1 pc.
Connection plate between FT-IR and IR microscope	1 pc.
Connection pipe (for light path) between FT-IR and IR microscope	1 pc.
Spare fuses	2 pcs.
AC cable	1 set
Funnel	1 pc.
Lid for MCT dewar	1 pc.
Pipette	1 pc.



● Specifications are subject to change without notice.

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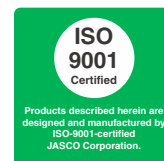
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