

# IRT-7X

## Multi-channel Infrared Microscope



## Specifications

### [Hardware]

Applicable FTIR main unit:	FT/IR-4X, 6X, 8X <sup>1</sup>
Photometry:	Transmission and reflection
Observation system:	Direct through system
Standard detector:	16 ch linear array midband MCT detector (7800 - 650 cm <sup>-1</sup> ) Midband MCT detector (7800 - 550 cm <sup>-1</sup> )
Optional detector:	DLATGS detector (7800 - 400 cm <sup>-1</sup> ), InGaAs detector (12000 - 4000 cm <sup>-1</sup> ) <sup>2</sup>
Liquid nitrogen holding time <sup>3</sup> :	Approx. 8 hours (Linear array midband MCT detector) Approx. 15 hours (Midband MCT detector)
Detector switching:	3 detectors can be installed simultaneously in the instrument (software switching).
Signal-to-noise ratio:	Linear array detector 1500:1 (Pixel resolution: 12.5 × 12.5 μm, Resolution: 16 cm <sup>-1</sup> , Accumulation time: 1 min., around 2200 cm <sup>-1</sup> , P-P) Midband MCT detector 12000:1 (Pixel resolution: 100 × 100 μm, Resolution: 4 cm <sup>-1</sup> , Accumulation time: 1 min., around 2200 cm <sup>-1</sup> , P-P)
Pixel resolution: (Linear array detector)	12.5 × 12.5 μm (×16), 6.25 × 6.25 μm (×32: option), 20 × 20 μm (×10: option)
Measurement time: (Linear array detector)	1.6 sec. (FT/IR-6X, Measurement area: 200 × 200 μm, Pixel resolution: 12.5 × 12.5 μm, Resolution: 16 cm <sup>-1</sup> , Accumulation: 1)
Measurement time: (Midband MCT detector)	185 sec. (FT/IR-6X, Measurement area: 1000 × 1000 μm, Pixel resolution: 25 × 25 μm, Resolution: 16 cm <sup>-1</sup> , Accumulation: 1)
Observation:	IQ Monitor (simultaneous sample measurement and observation) 5 million pixel CMOS camera, electrical iris mechanism
Observation illumination:	High-intensity white LED (with auto brightness function)
Objective mirror:	×16 (Option: ×10, ×32)
Objective lens:	Option: ×4, ×10
Objective selector:	4-hole motor-driven revolver changeover, with automatic objective recognizing mechanism
Condenser mirror:	×16 (Option: ×10, ×32) Slide-in mechanism, with automatic condenser mirror recognizing mechanism
Automatic condenser mirror adjustment:	Standard
Aperture:	Automated vertical/horizontal adjustment, and angle of rotation
Sample stage:	Automatic XYZ stage Movable distance: X: 100 mm, Y: 75 mm, Z: 30 mm (1 μm step) Maximum load: 5 kg (maximum), 1 kg (standard) 40 mm thick sample applicable <sup>4</sup> , Optional Joystick
Auto focus function:	Standard
ATR pressure sensor:	Standard
Purge:	Available (Purge case: option)

Measurement options:	ATR measurement, RAS measurement, IR polarization measurement
Observation options:	VIS polarization observation
Dimension/Weight:	565(H) × 350(W) × 610(D) mm / 56 kg
Power Requirement:	AC100 V 50/60 Hz max 70 VA

[Software]

Measurement assist function:	Observation image optimization, Real-time sample recognition (IQ IR NAV) <sup>*5</sup> , Registration of measurement points (IQ IR NAV) <sup>*5</sup> Refining of the Measurement Target (Advanced Search NAV) <sup>*5</sup> , Real-Time Analysis Result Display (Advanced Search NAV) <sup>*5</sup>
JASCO Particle Analysis <sup>*5</sup> :	Standard
IQ mapping: (measurement by IR light scanning)	Area mapping measurement, ATR mapping measurement, line measurement, multi-point measurement
Automatic XYZ stage operation	Stage movement, centering, area mapping measurement, ATR mapping measurement, line measurement, multi-point measurement
Multi Image	Allows a broad area image to be synthesized from several standard images (Maximum acquisition area is the movable area of the automatic XYZ stage), The measurement area can be set within the displayed area.
Real-Time Display during mapping measurement:	Spectrum, Chemical image of specified wavenumber, Measurement point on the microscopic image
Data Processing	Peak height, Peak height ratio, Peak area, Peak area ratio, Peak shift, FWHM, Distance measuring, Analysis Wizard <sup>*5</sup> , Imaging model analysis, Mapping analysis
Image Display	Color 3D diagram, Bird's-eye view, Spectrum contour map view, Spectrum color-coded diagram, 3D spectrum, 2D spectrum view, Overlay display
Validation program	Standard (validation jig is required)
Optional program	IR Mapping SSE Analysis <sup>*5</sup> , 2D Disrelation Mapping add-in <sup>*5</sup> , CFR micro measurement/analysis <sup>*6</sup>

\*1 Rapid scan option is required.

\*2 Near IR extension options should be applied to FTIR main unit.

\*3 "Liquid nitrogen holding time" is the initial value when installing the instrument.

\*4 Reflection measurement of sample up to 40 mm thick can be performed by removing the condenser mirror and stage spacer.

\*5 These functions cannot work with CFR micro measurement/analysis program.

\*6 FTIR main unit should have Spectra Manager Ver. 2.5 CFR when using CFR micro measurement/analysis program.

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