

Nicolet FTIR Spectrometer Selection Guide

Choose the right Thermo Scientific™ Nicolet™ FTIR Spectrometer that fits your workload, user skill level and chemical identification needs. Whether you run a Quality Control lab, a cutting-edge Research lab or a supporting Analytical Services lab, trust the leader in infrared spectroscopy to give you reliable data. With our rapid-response support teams, we help keep your labs running anywhere in the world.

Use Fourier transform infrared (FTIR) spectroscopy to:

- Identify unknown materials (e.g., Forensics, Art restoration, Counterfeit testing)
- Conduct contaminant analysis (e.g., Analytical Services, Gemology)
- Reverse engineer new products (e.g., Materials Science research)
- Verify chemical structure and mixture compositions (e.g., Quality Assurance)

Industries where FTIR provides definitive answers:

- Polymers & Plastics
- Pharmaceutical
- Automotive
- Energy Storage
- Food & Beverage
- Cosmetics
- Cement & Construction
- Forensics
- Nanomaterials
- Paper & Paints
- Art Restoration



	Nicolet Summit FTIR Spectrometer family	Nicolet iS20 FTIR Spectrometer	Nicolet iS50 FTIR Spectrometer	Nicolet iS50R FTIR Spectrometer	Nicolet iG50 FTIR Spectrometer
Spectral range	Mid-IR	Mid-IR	Far-IR, Mid-IR, Near-IR, Visible	Far-IR, Mid-IR, Near-IR, Visible	Dedicated Far-, Mid-, or Near-IR
Automated range changing	No	No	Yes (ABX option)	Yes (ABX option)	No
Signal to Noise ‡	LITE 14,000:1; X 35,000:1; PRO 40,000:1	50,000:1	>55,000:1	>55,000:1	>55,000:1
Spectral resolution (cm⁻¹)	LITE, X 0.6; PRO 0.45	0.25	<0.09	<0.09	<0.09
Scan modes	Linear	Linear	Linear, Dual Channel option	Linear, Dual Channel, Step-Scan, TRS	Linear
Number of external ports	0	1	4	4	1
Available accessories	<ul style="list-style-type: none"> • Everest ATR and iD series accessories • Compatible with major third-party accessories 	<ul style="list-style-type: none"> • Smart accessories • Full-size sample compartment • Compatible with major third-party accessories • Microscopy, TGA-IR 	<ul style="list-style-type: none"> • Smart accessories • Full-size sample compartment • Compatible with major third-party accessories • Microscopy, TGA-IR, NIR • Built-in ATR 	<ul style="list-style-type: none"> • Smart accessories • Full-size sample compartment • Compatible with major third-party accessories • Microscopy, GC-IR, TGA-IR, NIR, PM-IRRS, VCD, TRS* • Built-in ATR 	On-line, in-line, at-line sampling
Use environment	Portable and Laboratory	Laboratory	Laboratory	Laboratory	Manufacturing
ASTM, EP/JP/USP, 21CFR-P11 Compliance	Yes	Yes	Yes	Yes	Yes
Microsampling (spatial resolution)	100 microns	10 microns	10 microns	10 microns and monolayer coatings	None
Portable	Yes				
Dimensions (W x D x H mm)	Standard: 340 x 320 x 240 With touchscreen: 530 x 320 x 430	550 x 570 x 250	626 x 698 x 276	626 x 698 x 276	450 x 420 x 250 (customizable options)
Ideal for					
Process Analysis					✓
Materials Research			✓	✓	
Analytical Support & Forensics		✓	✓	✓	
Quality Control	✓	✓			✓
Teaching	✓	✓			

Add an accessory to your Nicolet FTIR spectrometer and expand your capabilities as well as your sample knowledge.

Accessories					
Diamond ATR	Everest Diamond ATR	Smart iTX Diamond ATR	Built-in Diamond ATR	Built-in Diamond ATR	Customizable
Microsampling	SurveyIR Microspectroscopy	Nicolet iN5 Microscope	Nicolet RaptIR FTIR Microscope	Nicolet RaptIR FTIR Microscope	Customizable
Gas Sampling	Yes	Yes	Yes	Yes	None
Near-IR capabilities	Nicolet iS5N FT-NIR spectrometer	Smart Integrating Sphere	NIR Integrating Sphere & Probe Module	NIR Integrating Sphere & Probe Module	No
TGA-IR capabilities	No	TGA-IR Module	TGA-IR Module	TGA-IR Module	No
Automated Beamsplitter Exchanger (ABX)	No	No	Yes	Yes	No
Raman Module	No	No	Yes	Yes	No
GC-IR Module	No	No	Yes	Yes	No
Advanced experiments				PM-IRRS, VCD, Step-Scan, TRS*	

*PM-IRRS = Polarization modulation-infrared reflection-adsorption spectroscopy
VCD = Vibrational circular dichroism
TRS = Time-resolved spectroscopy

‡ SNR in one minute, 4 cm⁻¹ resolution, Black-Harris Apodization



Nicolet iS50 built-in ATR with one touch control



Nicolet iS50 Raman module



Nicolet iS50 with TGA module



Nicolet iS50 with NIR module



Nicolet iS50 connected to Thermo Scientific™ TRACE™ 1300 Gas Chromatograph

Request expert advice, a quote or a demonstration at thermofisher.com/FTIR

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