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# 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 Apex 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 | 0.25 |
| 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 | • Everest ATR and iD series accessories • Compatible with major third-party accessories | • Smart accessories • Full-size sample compartment • Compatible with major third-party accessories • Microscopy, TGA-IR | • Smart accessories • Full-size sample compartment • Compatible with major third-party accessories • Microscopy, TGA-IR, NIR • Built-in ATR | • 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/ RaptIR+ FTIR Microscopes | Nicolet RaptIR/ RaptIR+ FTIR Microscopes | 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-IRRAS, VCD, Step-Scan, TRS* | |

*PM-IRRAS = 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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