



FTIR Spectrophotometers

Nicolet 4700/6700 FT-IR



Nicolet 4700/6700 FT-IR spectrometers offer a range of fully upgradeable, routine and advanced research FT-IR spectrometers focused on stability and efficiency. Every facet of the Nicolet 4700/6700 FT-IR spectrometers has been engineered to facilitate sample handling, introduce options to scientists, and increase laboratory throughput. Robust hardware, smart firmware, and user-friendly software come together to create the most powerful tools for applying FT-IR solutions to chemical identification problems.

The Nicolet 4700/6700 and Nicolet 8700 FT-IR spectrometers can be configured for multiple spectral ranges (far-IR to UV-Vis), with the option of gold-coated or aluminum optics. Its high-intensity ETC EverGlo (patent pending) IR source sets new industry standards. The normal operation mode is temperature stabilised and users have additional options of 'Rest' and 'Turbo' mode. The former helps to extend the life of the source, while the latter provides extra output for difficult samples. In combination with five external beam options, and the widest selection of detectors in the industry, the Nicolet 4700/6700 FT-IR spectrometers are the most powerful FT-IR systems available. The spectrometer utilises continuous

dynamic alignment to ensure exceptional high-resolution lineshapes. Thermo is the only FT-IR manufacturer with the proven ability to upgrade from a basic system to a fully advanced research system. The advanced optics and electronics platform with USB 2.0 interface make Nicolet 4700/6700 FT-IR spectrometers flexible in every sense of the word. Components, including optics, are pinned-in-place, which ensure they are always in alignment as well as guaranteeing reproducibility, stability, and the ability to swap and replace components. Its compact optical path minimises beam pathlength and improves spectral performance by limiting the number of beam reflections, which translates into



extremely reproducible results with no instrument drift. The spectrometer takes advantage of unique Smart System technology, which automates purge and optical component recognition. Sampling parameters, beam path, spectral range, and experiment types are also automatically configured with Nicolet 4700/6700 FT-IR spectrometers. The Nicolet 4700/6700 FT-IR spectrometers also offer new optical options, such as band pass filters, energy attenuation screens, and polarisers.

Nicolet 8700 FT-IR Spectrometer

Research-grade Nicolet 8700 FT-IR spectrometers offer a full range of step-scan operation modes for time-resolved and phase-resolved experiments, and dual-channel continuous-scan mode for polarisation modulation/demodulation experiments, as well as conventional single-channel continuous-scan operation and for the more conventional applications.

The Nicolet 8700 FT-IR spectrometer with the Vectra-Piezo™ interferometer provides superior performance and advanced scanning capabilities, including step-scan spectroscopy. Step-scan spectroscopy eliminates Fourier modulation interference encountered in conventional, continuous-scan FT-IR. It also allows measurements to be made as an explicit function of time, phase, or space. Typical applications of step-scan FT-IR are classified as:

- Time-resolved spectroscopy (TRS) for fast kinetic process studies
- Amplitude modulation emission spectroscopy

- Phase-resolved spectroscopy (PRS) for modulation experiments
- Sample modulation experiments (polymer stretching)

It has advanced scanning velocities for rapid- and slow-scan, and an extended spectral range from 25,000 to 20cm⁻¹. The Nicolet 8700 spectrometer also makes possible hyphenated techniques, such as advanced infrared microscopy, GC-IR, TGA-IR, or FT-Raman spectroscopy. Its superior design provides user-friendly analysis, and the full utilisation of digital signal processor (DSP) for spectrometer control, signal generation, and data processing results



in an easy-to-use spectrometer with superior performance for both time and frequency-domain experiments. Extensive on-line help will take you through even the most difficult experiments and provide enough information to run them with minimum effort and time.