

PerkinElmer U.S. LLC. is the sole manufacturer and distributor of Spectrum Two FTIR.

Although there are other manufacturers of FTIR instruments, PerkinElmer Spectrum Two is the only one that presents the features and economic benefits that will best satisfy the requirements of this laboratory.

The following is a description of a series of features/specifications that are not present on any other FTIR instrument in present manufacture. These features are discussed with respect to the operational requirements and benefits of this instrument to this laboratory.

The Dynascan interferometer is a patented PerkinElmer technology which improves the traditional Michelson interferometer design. Typical Michelson interferometers rely upon movement of a single mirror on a linear track. Through the range of motion, the mirror will experience tilt and shear, two imperfections in alignment which affect measurement quality due to fluctuations in IR light intensity reaching the detector. The Dynascan interferometer uses a pivoting mirror pair, making it immune to the effects of tilt and shear.

PerkinElmer has implemented a technology known as Optics Guard which eliminates the need for instrument purge, while also significantly reducing the frequency with which the desiccant packs must be replaced.

PerkinElmer's proprietary Atmospheric Vapor Correction (AVC) algorithm provides efficient, real-time subtraction, while also adapting to changes in the spectra of vapors with changing environmental and instrumental conditions

Specifications:

OPTICAL PERFORMANCE

Wavelength Range 8,300 – 350 cm⁻¹ optimized, proprietary KBr beamsplitter 6500-550 cm⁻¹ with ZnSe optics

Spectral Resolution 0.5 cm⁻¹ standard

Wavelength Precision 0.007 cm⁻¹ at ca 3000 cm⁻¹ achievable

Wavelength Accuracy 0.1 cm⁻¹ at 3000 cm⁻¹

Signal-to-noise 9,300:1 peak-peak, 5 seconds

32,000:1 peak-peak, 1 minute

14,500:1 peak-peak, 5 seconds

50,000:1 peak-peak, 1 minute

with optional performance pack

OPTICAL SYSTEM

General Long-life sealed and desiccated optical unit incorporating OpticsGuard™ design,

Vibration isolated baseplate.

Interferometer Rotary Michelson interferometer, high stability, self-compensating for dynamic alignment changes due to a tilt and shear.

Optics Kinematically mounted, zero alignment optics, with high reflectivity and a low-angle off axis design. Proprietary

OpticsGuard system for extended desiccant life and additional optical component protection.

Detectors High linearity room temperature detector (standard)

Temperature-stabilized high-performance DLATGS detector optional.

Source Long-life source with proprietary hot-spot stabilization. User replaceable from outside

instrument.

Beamsplitter Proprietary extended range KBr.

Desiccant Long-life desiccant system accepts disposable packs. Software controlled desiccant status indicator.

Validation Software controlled validation wheel option containing a polystyrene reference material, traceable to a NIST

standard for wavenumber accuracy and a Schott NG11 filter for ordinate repeatability.

Optical Windows KBr (standard), ZnSe option for exceptionally high humidity environments.

DATA SYSTEM AND ELECTRONICS

Signal Sampling Over-sampling delta-sigma converter.

Communication USB, wireless and TCP/IP interface allows direct connection with LAN.

Instruments can be configured with wireless router communication.

Calibration Transfer Absolute Virtual Instrument (AVI) option – actively standardizes instrument response to further improve repeatability and protect data integrity.

Atmospheric Compensation Minimizes effect of atmospheric water and CO₂ on the sample spectra without the need for reference or calibration spectra. Operates at various instrument settings without having to recalibrate the correction.

Accessory Recognition Spectrum Two accessories are automatically detected as soon as they are locked into the sampling area.

Instrument parameters are optimized for the installed accessory. Accessories information stored with spectral data.

Error Trapping All sample spectra are checked for common spectroscopic and sampling problems. Key instrument components are continuously monitored.

Component Checks Individual component checks under software control can be executed on-demand or automatically scheduled at preset times/intervals.

Powersave Mode Instrument standby and power-up can be automatically scheduled

If you have any questions, please reach out.

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