

Specifications for a Vibrational Circular Dichroism Spectrometer

Spectrometer shall be capable of measuring infrared transmission spectra, both standard Fourier Transform infrared (FTIR) transmission and vibrational dichroism, which is the difference in transmission between right- and left-hand circularly polarized infrared radiation. The minimum requirements include infrared frequency coverage and resolution, sensitivity in terms of signal-to-noise ratio for measured transmission / absorbances, baseline reduction features, and other instrument operational capabilities regarding hardware and software capabilities, as well as warranties, training and instrument documentation in accordance with the specifications.

CLIN 0001

Vibrational Circular Dichroism (VCD) Spectrometer

Specific Requirements:

- FTIR spectrometer with 800-6500 cm^{-1} frequency range with variable resolution settings 0.5-16 cm^{-1} ; includes all necessary components: sources, beamsplitters, detectors, to provide specified sensitivity and resolution over this range.
- Instrumentation required for vibrational circular dichroism measurements, including:
 - Photoelastic modulator(s) with controller(s)
 - Lock-in amplifier(s)
- Performance specifications:
 - Absorbance noise level (ΔA) $< 1 \times 10^{-5}$ for 20 minute collection at 4 cm^{-1} resolution within the spectral range 850 to 1800 cm^{-1} with a maximum absorption less than 0.5 ($A < 0.5$).
 - Baseline deviation with one photoelastic modulator of $< 3 \times 10^{-5}$
 - Baseline deviation from zero of less than 1×10^{-5} absorbance units for a 500 cm^{-1} range that includes the range 1400-1800 cm^{-1} , which will probably require a second photoelastic modulator
- Personal computer, including printer and monitor, with software for controlling instrument, spectroscopic analysis, and IR and VCD library spectra
- Minimum 1 year warranty on system performance
- Requisite onsite installation and training

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Training

CLIN 0001AB

1 Year Standard Commercial Warranty