Universal sampling accessory

Data Sheet

The Universal Sampling accessory is a multi-purpose sample compartment accessory that can be used for transmission, diffuse reflectance, variable angle specular reflectance, and polarized grazing angle reflectance measurements. This versatile Universal Sampling accessory may be the only accessory you need to purchase for a wide range of samples, yet it delivers optical performance superior to that of most accessories dedicated to single applications.

Application solutions include:

- Thin film analysis of coatings on metal surfaces
- Corrosion analysis
- Orientation studies
- Diffuse reflectance of powdered or rough samples for:
  - QC of pharmaceuticals
  - Fabrics
  - Surface coatings
  - Clays, minerals, coal
- Micro-transmission of micropellets, fibers, polymer inclusions

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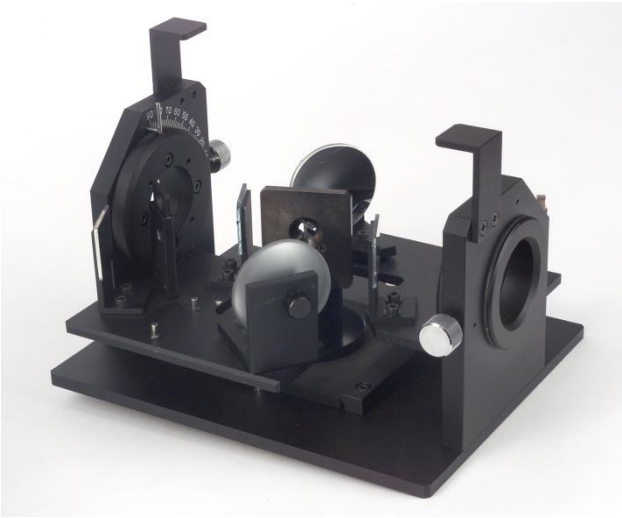
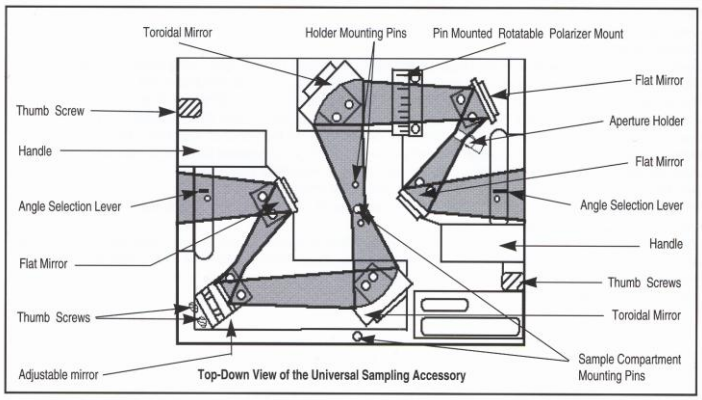


Benefits:

- Horizontal sample platform with micrometer controlled vertical sample height adjustment provides easy sample loading and alignment, so you spend less time on setup and more time of analysis.
- Optional adjustable polarizer for grazing angle reflectance or orientation studies provides flexibility to analyze a wide range of samples.
- Kinematic pin-in-place sample holders for specular reflectance, diffuse reflectance, and micro-transmission, allow you to quickly and easily switch sampling modes, providing accurate and reproducible high quality data.
- Independently adjustable input and output optical stages allow collection of diffuse reflectance spectra at any combination of angles resulting in the maximum flexibility to meet all of your sampling requirements.



The optics of the Universal Sampling accessory are designed to maximize the signal throughput and ease of sample handling on all Agilent FTIR spectrometers. The accessory can be converted from reflectance to transmission in a matter of seconds by simply replacing the sample holder and re-aligning one adjustable mirror.

In the transmission mode, the accessory serves as a 2.5X beam condenser, allowing transmittance measurements to be made on small samples, such as micropellets or fibers. For variable angle specular reflectance, the incidence and reflection angles can be varied from 15° (near normal) to 85°. With the use of the optional polarizer, polarized grazing angle spectra of sub-monolayer films on metallic substrates can be recorded. In the diffuse reflectance mode, diffuse reflectance spectra may be collected with the input and output angles set to 45°, or they may be set to different angles as desired.

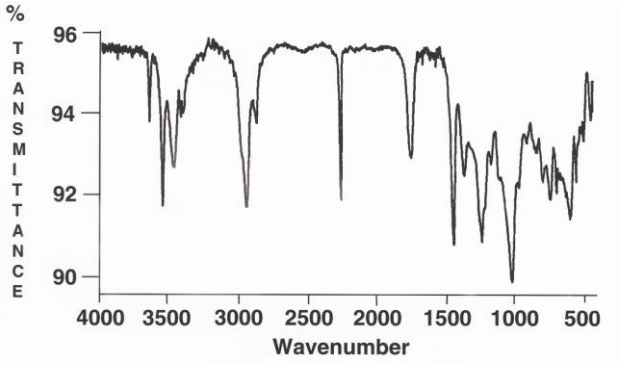


Figure 1. Single polymer fiber examined with beam condenser configuration of universal sampling accessory. Spectrum results from only 16 scans co-added at 4 cm^{-1} resolution

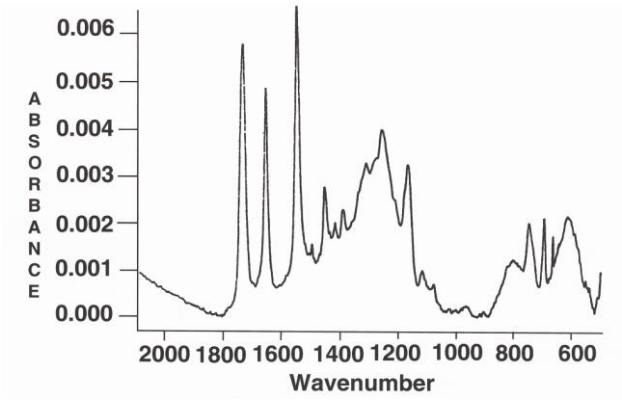


Figure 2. Spectrum obtained for a 100 angstrom coating using grazing angle of incidence with the optional polarizer, recorded by co-added 256 scans at 2 cm^{-1} resolution

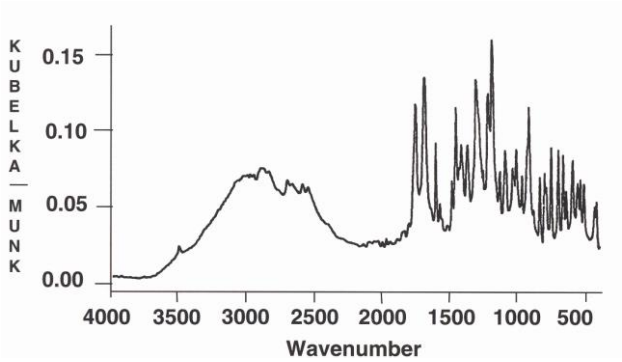


Figure 3. Diffuse reflectance spectrum for a sample of 1% (by weight) aspirin diluted in KBr powder, collecting 16 scans at 8 cm^{-1} resolution

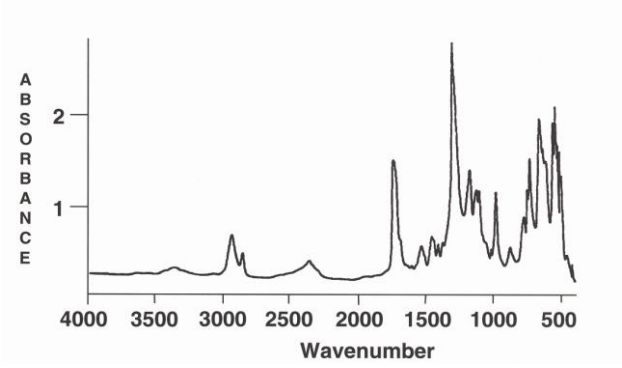


Figure 4. Specular reflectance spectrum collected for a polymer coated aluminum foil, 30° angle of incidence, 1 scan at 4 cm^{-1} resolution

Item	Part Number
Universal Sampling accessory	099-1316
Note: Compatible with all FTIR spectrometers.	
Options	
Polarizer for Universal Reflectance/Sampling Accessory (KRS-5 substrate)	013-4996

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