VideoMVP™

The VideoMVP™ offers all the advantages of a high performance diamond ATR accessory plus video imaging and optional force sensing capabilities. The VideoMVP™ features a convenient horizontal sampling with an active sampling area of less than 500 µm in diameter on its monolithic diamond. This makes it ideal for infrared spectroscopy measurements of extremely hard samples, abrasive powders, fibers, beads, and even corrosive materials. The video imaging system provides a real-time magnified view of the sample through the ATR crystal. This image can be seen on the built-in display or digitally captured for a permanent record. Solid samples are compressed against the ATR crystal using the built-in pressure applicator. The pressure applicator features a slip clutch to prevent over-pressurization. An optional force sensor with digital read-out is available for precise measurement of the force applied to the sample and to reproducibly apply lower force than delivered by the built-in slip clutch.

APPLICATIONS

- Extremely hard samples; highly corrosive liquids; minerals; slightly curved samples; fibers; beads; nanoliters of liquids and pastes; and defects on large panels.
- Forensics, textiles and combinatorial chemistry samples.
- Samples requiring archival storage of images as well as spectra.

FEATURES

- Monolithic hemispherical diamond mechanically retained in a chemically resistant holder.
- All reflective optics other than the ATR crystal.
- Convenient horizontal sampling.
- Designed for optimal contact between the ATR element and solid samples.
- Minimal sample preparation required.
- Small sampling area: 500 µm in diameter with the diamond ATR crystal.
- Incident angle: 45°.
- Built-in pressure applicator with slip-clutch for reproducible calibrated pressure application.
- PermaPurge™ for rapid purging of the system.
- RoHS compliant.
- Video imaging system for viewing through the diamond ATR includes:
  - Built-in LCD display on a rotating mount for easy viewing.
  - 120X magnification of the sample.
  - USB-video adapter and software included for storing images.
- Options:
  - Readily exchangeable Ge, ZnSe, Si and diamond ATR sampling plates.
  - Heatable sampling plates for operation up to 200°C with diamond, Si or ZnSe ATR crystals, 100°C with Ge.
  - Powder adapter for retaining powdered samples.
  - Flow-through liquid cell for static and flow applications.
  - Force sensor with digital read-out for precise force measurements.

INCLUDES

- Mounted diamond ATR.
- Built-in force limited pressure applicator for solid sampling.
- LCD display and USB-video adapter for video imaging.
- Mating hardware for the specified spectrometer.

Mounted ATR Crystals		
	Ambient	Temperature Controlled
Si	UNS-ATR-0E	UNS-HOT-0E
ZnSe	UNS-ATR-0M	UNS-HOT-0M
Ge	UNS-ATR-0J	UNS-HOT-0J
Diamond	UNS-ATR-2W	UNS-HOT-0W

ORDERING INFORMATION

	CATALOG NO.		CATALOG NO.		CATALOG NO.
VideoMVP™, 110V	MVV-XXX-1	Liquid Cell	UNS-LCF	Powder Retainer	UNS-PSC
VideoMVP™, 220/240V	MVV-XXX-2	Liquid Cell O-Ring	ORV-0015	Powder Retainer O-Ring	ORV-012
Force Sensor	MVV-FSD				

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The VideoMVP is a high performance diamond ATR microsampler with real-time imaging of the sample. This makes it ideal for examining fibers and other small samples via infrared spectroscopy. Not only is positioning minute samples simple and straightforward, but the imaging system allows observation of the 'wetting' of the crystal as pressure is applied in addition to photographic documentation of the area sampled.

The VideoMVP comes with a diamond ATR crystal with a 500 μm sampling area. This ATR crystal is mechanically retained in a chemically resistant sample holder. The integrated LCD display provides a 120X magnified image of the sample and the display tilts for easy viewing. The imaging system can be connected to a computer using the supplied adapter to record and store the image.

The basic configuration comes with a built-in slip clutch which is designed to apply sufficient force for quality spectra with a over-pressurization limit. An optional force sensor is available for more accurate and repeatable pressure application.

Sample spectra recorded with the VideoMVP are shown in Figure 1 through 3. Figure 1 shows the spectrum of cotton fibers, recorded with the maximum pressure applied by the VideoMVP. From the imaging system, it is possible to see the fibers compress against the crystal as pressure is applied. Figure 2 shows the spectrum from a ridge on a plastic bag. From the spectrum, it is clear that the ridge is composed of polyethylene. Figure 3 features spectra recorded from two different locations on a credit card. The two sections are visibly different, but the spectroscopic differences are small.

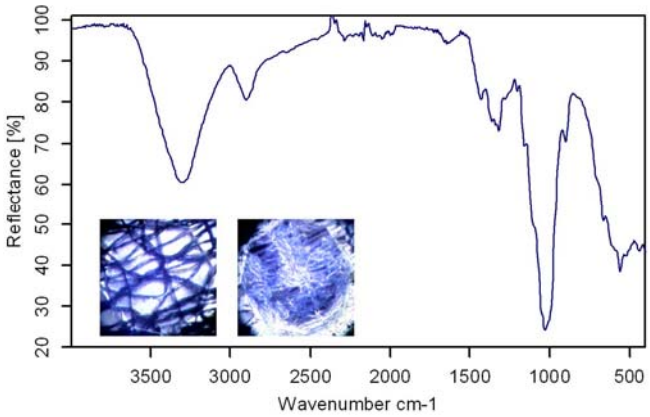

Figure 1. The ATR Spectrum of Cotton. The inset photographs show the cotton fibers before (left) and after (right) compression.

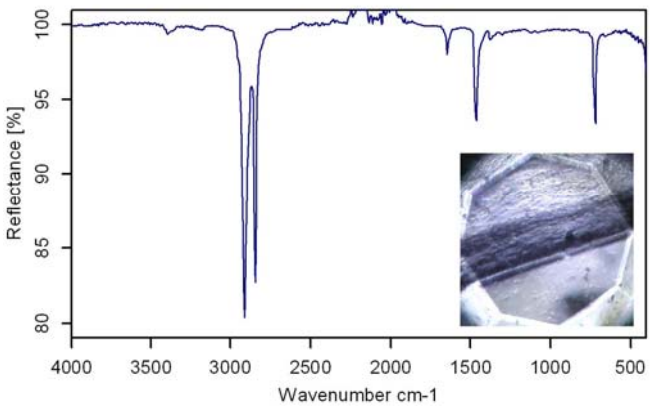

Figure 2. ATR Spectrum of a Ridge on a 2"x3" Ziplock Bag.

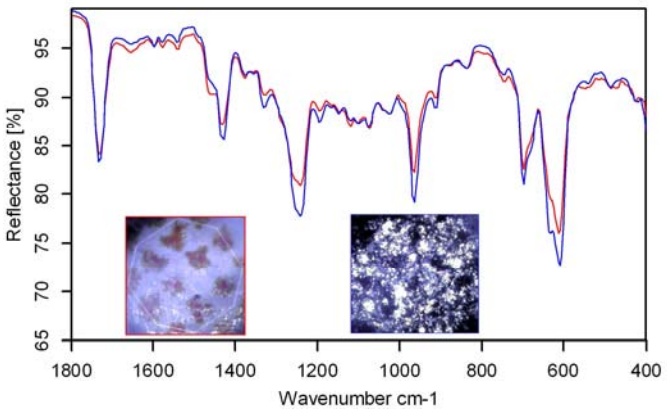

Figure 3. ATR Spectra from two locations on a credit card. The inset photographs are bordered by the color of the corresponding spectrum

As demonstrated, the VideoMVP is ideal for examining a wide variety of small samples in addition to focusing in on details on larger samples.

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