

# ACCESSORIES:

Create a customized system that's as versatile as your samples are diverse.

## Multi-Reflection DuraDisks

Diamond ATR elements with multi-reflection capability for enhanced sensitivity.

## Heating Capability

This accessory permits calibrated, elevated temperature studies, at temperatures up to 100°C. The package consists of an Autotune Controller with an easy to read, dual four-digit display that shows both the actual temperature of the DuraDisk as well as the target temperature. The DuraDisk temperature is monitored with an integral RTD, providing accuracy of +/- 0.1°C across the full temperature range.

## Cooling Capability

Optional inlet and outlet ports to flow cooling solutions.

## AmplifIR

The AmplifIR is a unique variable 45° specular reflection device designed specifically for thin film analyses. The IRbeam is externally reflected between the sample surface and an adjustable gold coated mirror. Raising or lowering the mirror increases or decreases the number of reflections. The AmplifIR utilizes transfectance principles, measuring through the surface coating. By increasing the number of reflections the effective pathlength increases the measurement sensitivity. The effective pathlength of the AmplifIR extends its use into the sub-500Å range.

## Gas Cell

This high-pressure gas cell for FT-IR analysis is capable of testing gases up to 1000 psi. The cell is compact in size yet creates a generous 10cm path length. Permanently aligned infrared multi-pass mirrors are isolated from the gas by sapphire-coated zinc selenide windows sealed with Kalrez® O-rings, permitting analysis of harsh and corrosive gases.

## Liquid & Flow Cell

For air sensitive samples, performing reaction analyses or other dynamic studies. The flow cell and the micro-volume flow cell permit convenient flow-through studies of aqueous and non-aqueous liquids at ambient or elevated temperatures. To assure complete chemical inertness and easy cleaning, chemical samples only contact stainless steel and Teflon® surfaces. The Flow Cell comes with standard thread for both Luer Lok® and Swagelok® fittings. The cell is rated to 100 psi. It is available on the 1, 3 and 9 reflection DuraDisks and works with heated DuraDisks.

## ATR LIBRARIES

Extensive ATR spectral libraries acquired with DiComp DuraDisks searchable with most versions of spectroscopy software. Excellent for QC/QA and forensic applications.

## SMITHS DETECTION

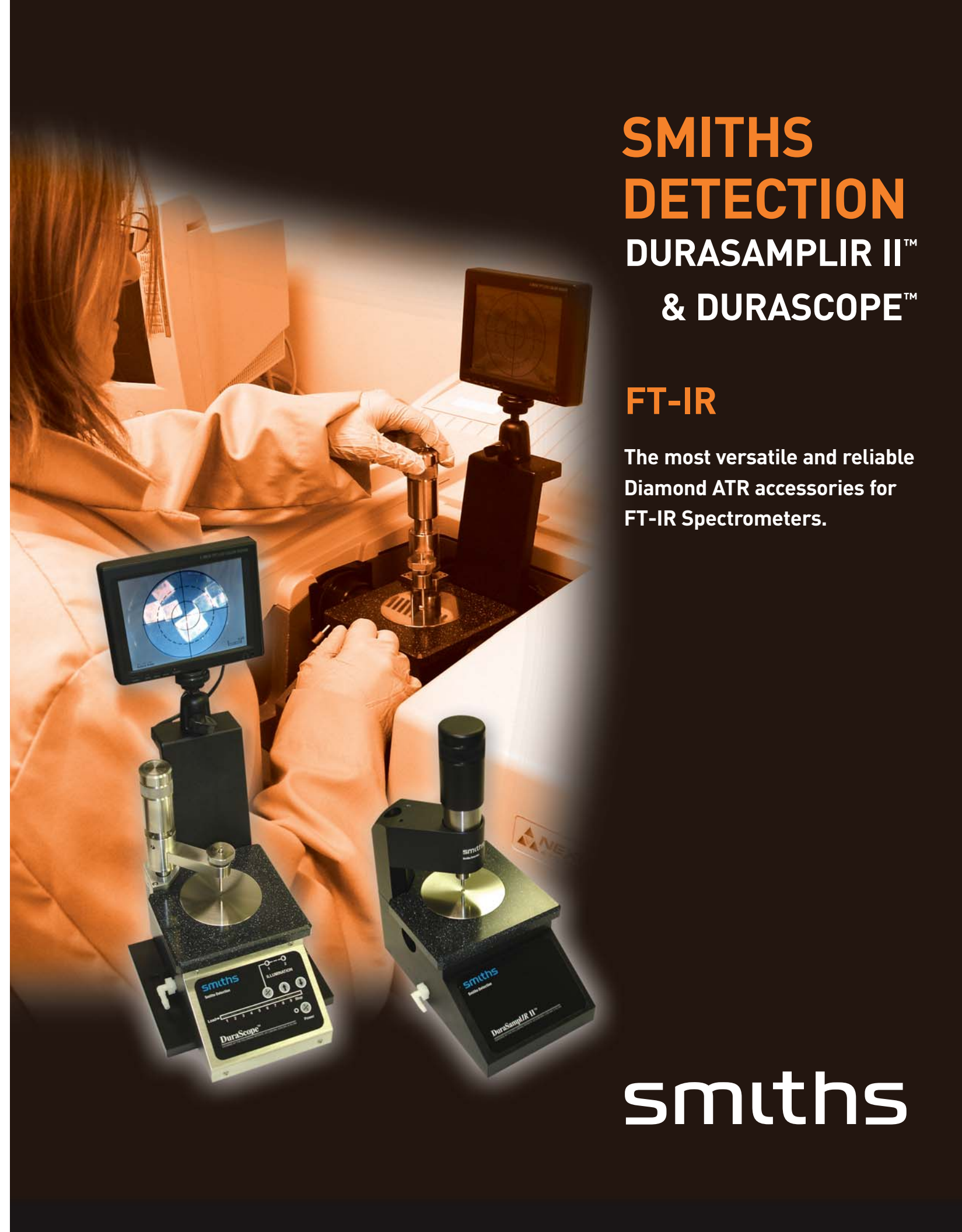
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# SMITHS DETECTION DURASAMPLIR II™ & DURASCOPE™

## FT-IR

The most versatile and reliable  
Diamond ATR accessories for  
FT-IR Spectrometers.



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## DURASAMPLIR II

The DuraSamplIR II is an in-compartment diamond ATR accessory that optimizes your spectrometer's analytical versatility by incorporating both ease of use and durability.

With its patented DiComp™ DuraDisk technology, the DuraSamplIR II offers high energy throughput and multiple pathlengths for increased sensitivity. The DuraSamplIR II also has the option of adding viewing, heating, cooling and flow through capability to accommodate all types of samples or to perform dynamic experiments for research.



### Why DuraSamplIR II?

- Unique optical design offers exceptional signal to noise
- Multiple pathlengths capability
- Upgradeable to flow through, heating, cooling and viewing
- Alternative crystal configurations are Germanium and Silicon
- Compatible with all FT-IR spectrometers

DuraSamplIR II's patented DiComp™ diamond ATR technology offers a virtually indestructible sampling surface, yet retains exceptional optical characteristics. Its unique optical design focuses all the infrared energy into the sample for the highest signal to noise possible with diamond ATR.

### Advantages of Diamond ATR:

- Only a small amount of sample is needed
- No sample preparation is required
- Unlimited pH
- Abrasion resistant for long-term reliability
- Easy to clean

Just **"place, click and scan"**. When analysis is complete simply wipe the diamond with solvent and you're ready for your next sample.

### Ensure Consistent Results

Intimate contact between a sample and the diamond ATR sampling element is essential for quality spectra. The DuraSamplIR II incorporates an easy-to-use pressure applicator with an electronic LED gauge that helps you apply a reproducible force to your sample.



## DURASCOPE—ADD THE POWER OF DURAVISION™

The DuraScope diamond ATR accessory with DuraVision unites the imaging capabilities of video microscopy with the versatility and simplicity of diamond ATR.

DuraVision provides a 38X video-magnified image of your sample, seen through the diamond ATR element. This enables you to see your sample in contact with the diamond internal reflection element (IRE) at the same time you are collecting ATR spectra. Samples as small as 50 microns are easily positioned, allowing you to see the specific area you're analyzing and ensuring good contact.

### Why DuraScope

- 38X video-magnified image of your sample
- Samples as small as 50 microns are handled with ease
- See your sample in contact with the diamond
- Ideal for photo documentation

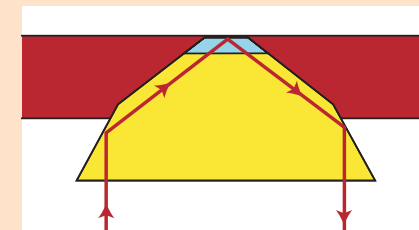
The DuraScope makes your lab more efficient, spectra more reliable and results unquestionable.

### Image Capture—Documenting Your Work Has Never Been Easier

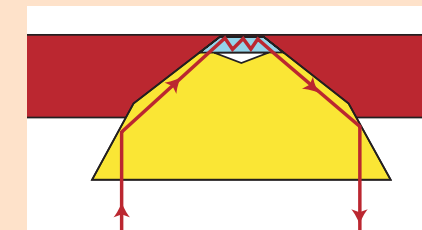
In addition to seeing and analyzing your sample, DuraVision supports computer-based image capture and archiving.

## ENHANCED SENSITIVITY FOR IMPROVED RESULTS

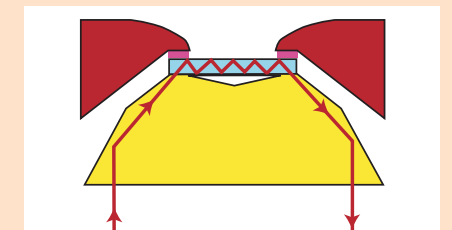
The DuraSamplIR II & DuraScope offer a variety of DiComp™ DuraDisks for enhanced sensitivity.



The Single-reflection DuraDisk is suitable for liquids requiring high throughput energy as well as solid samples that demand good contact pressure. Ideal for very rigid samples. Good signal to noise in the diamond lattice region between 2200 and 1900  $\text{cm}^{-1}$ .



The Three-reflection DuraDisk is ideal for solid and liquid samples requiring more pathlength sensitivity than the single reflection. High signal to noise in the spectral fingerprint region.



The Nine-reflection DuraDisk should be used for liquid, pastes and gel samples that require maximum sensitivity. Highest signal to noise attainable with diamond ATR. Ideal for complex mixtures and low infrared absorbers in the spectral fingerprint region. The diamond is recessed for liquid retention.

DuraDisks can be configured for flow and heating and cooling capabilities. Germanium and Silicon DuraDisks provide alternative depths of penetration and good signal to noise across the entire mid-infrared spectral region