

HUMAN HEALTH

ENVIRONMENTAL HEALTH

IR READY FOR ANY SAMPLING CHALLENGE

**FT-IR Spectroscopy
Sampling Accessories**


PerkinElmer
For the Better



FT-IR SAMPLING SYSTEMS

CHOOSE FROM A BROAD RANGE OF ACCESSORIES

Accessories play an important role in FT-IR analysis. Selection of the correct accessory speeds your analyses, increases repeatability of results and minimizes errors. We manufacture a host of high quality easy-to-use accessories and

partner with leading industry providers of branded IR accessories to provide a full range of compatible tools to extend the scope and capabilities of your FT-IR instrument.

Whatever your sample or application, we offer a sampling accessory that can make your measurement easier. From simple transmission spectroscopy techniques to more advanced research analysis, our premium “plug-and-play” accessories, such as UATR and diffuse reflectance, offer ultimate performance with minimum set-up and calibration through their convenient auto-recognition set-up design. Our value accessories are an affordable choice that provide you with the performance needed for demanding FT-IR analysis. Branded accessories, tested and approved for use on PerkinElmer FT-IR systems, allow method transfer based on previous use of similar accessories as well as extended capabilities for challenging applications.

Not every accessory is ideal for every application. Each accessory has a unique advantage that you can capitalize on for your given sample. With the widest range of both PerkinElmer designed and manufactured accessories and well-known brands of accessories from our global partners, our selection offers you the best solution for your laboratory’s needs both today and tomorrow.

We’ll work with you to best understand your laboratory needs and recommend the right accessories for your new or existing IR system.

Whatever your application, we have the right sampling accessory for you.

Offering more sampling options than ever before, we’ll enable you to conquer all your sampling challenges.

Chemicals and Materials

- Develop new products with deeper insight
- Troubleshoot manufacturing problems
- Identify product contaminants
- Confirm quality of materials
- Study advanced material properties, with a wide range of sampling options

Pharmaceuticals

- Gain deeper understanding of product formulations
- Perform counterfeit studies with an array of sampling accessories
- Identify contaminants and impurities in product safety studies
- Rapidly screen ID and quality of raw materials, intermediates and formulated products
- Analyze packaging and package coatings

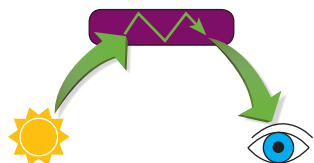
Research and Academia

- Configure complex experimental set-ups with custom sampling apparatus
- Quickly adapt the flexible platform for multiple research areas or research groups
- Perform far-IR characterization of synthesized materials, semiconductors and novel materials
- Characterize novel laser and detector devices using the configurable beampaths

Let’s help you choose a winner.

INFRARED SPECTROSCOPY SAMPLING TECHNIQUES

Attenuated Total Reflectance (ATR)

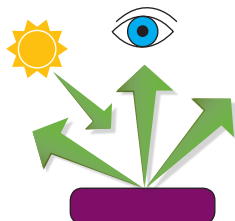


A sampling technique which requires little to no sample preparation. A beam of infrared light passes through the ATR crystal and is reflected off the surface of the sample. The reflection forms an evanescent wave which is collected by a detector.

SAMPLE TYPES: Solid, Liquid, Powder

APPLICATIONS: Identification of powders and polymers. Quantitative measurements for liquids, including aqueous solutions.

Diffuse Reflectance

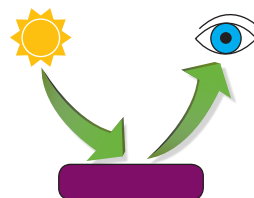


Diffusely scattered light is collected when a beam of light reflects off a rough, matt surface e.g. powder or fiber.

SAMPLE TYPES: Powders, Fibers, Solids with Rough Surface

APPLICATIONS: Characterization of minerals and hard plastic materials.

Specular Reflectance

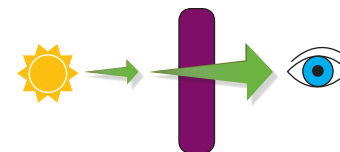


A mirror-like reflection occurs when a beam of light strikes a smooth, shiny surface such that the angle of incidence equals the angle of reflection.

SAMPLE TYPES: Thin Films on Substrates

APPLICATIONS: Analysis of coatings on metallic substrates, Langmuir Blodgett films and self-assembled monolayers.

Transmission



When radiation passes through a body a proportion of the energy is absorbed by the sample and the remainder travels on to the detector.

SAMPLE TYPES: Solid, Liquid, Gas

APPLICATIONS: Quantitative determination of fuel properties, e.g. biodiesel, high-resolution gas-phase spectroscopy

SPECTRUM TWO™ SERIES

FRONTIER™ SERIES

SPECTRUM TWO SERIES

FRONTIER SERIES

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Spectrum Two UATR¹

Frontier HATR¹
Frontier UATR^{1,2}

Frontier Diffuse Reflectance¹

PIKE MIRacle™ ATR
Specac Silver Gate™ ATR
Specac Gateway HATR
Specac 25 Reflection VATR

PIKE GladiATR ATR
PIKE Multiple Reflection HATR
PIKE Classic VATR
PIKE MIRacle™ ATR
Specac Golden Gate™ ATR
Specac Silver Gate™ ATR
Specac Gateway HATR
Specac 25 Reflection VATR

PIKE EasyDiff™ Diffuse Reflectance

PIKE Mid-IR Integrating Sphere
PIKE NIR Integrating Sphere
PIKE DiffusIR™ Diffuse Reflectance
Specac Selector™ Diffuse Reflectance

PIKE 80 Spec Grazing Angle

PIKE 10 Spec Specular Reflectance

PIKE VeeMAX II Variable Angle Specular Reflectance

PIKE 80 Spec Grazing Angle

PIKE 10 Spec Specular Reflectance

Specac Microfocus Beam Condenser
Specac Variable Temp Cell (Liquids/Solids)
Specac Cyclone™ Gas Cells (2, 5 M)
Specac Tornado™ Gas Cell
Specac 10cm Demountable Gas Cell

Oxford Optistat®DN Cryostat System
IRLabs Bolometer
Gasera PA301 Photoacoustic Accessory
Specac Microfocus Beam Condenser
Specac Variable Temp Cell (Liquids/Solids)
Specac Cyclone™ Gas Cells (2, 5 M)
Specac Tornado™ Gas Cell
Specac 10cm Demountable Gas Cell

HATR

HATR

Diffuse Reflectance

Diffuse Reflectance

Fixed Angle Specular Reflectance

Fixed Angle Specular Reflectance

Variable Angle Reflectance

Demountable Cells
Semi-Demountable Cells
Sealed Liquid Cells

Demountable Cells
Semi-Demountable Cells
Sealed Liquid Cells

¹ Automatic recognition plug-and-play zero alignment accessories which are automatically optimized for the crystal in use.

² Diamond/ZnSe, Diamond/KRS5, Ge/Ge ATR Crystal options; 1,3,9 bounce options

INFRARED SAMPLING ACCESSORY SELECTOR (MARKET / APPLICATION)

		Reflection															Transmission					Tools									
		Attenuated Total Reflectance (ATR)										Diffuse Reflectance				Specular Reflectance					Solid & Liquid Cells					Gas Cells					
		PerkinElmer UATR	PerkinElmer HATR	PIKE MIRade™ ATR	PIKE GladiATRATR	PIKE Multiple Reflection HATR	PIKE Classic VATR	Specac Golden Gate™ ATR	Specac Silver Gate™ ATR	Specac Gateway HATR	Specac 25 Reflection VATR	PerkinElmer Diffuse Reflectance	PIKE EasyDiff™ Diffuse Reflectance	PIKE DiffusIR™ Diffuse Reflectance	Specac Selector™ Diffuse Reflectance	PerkinElmer Fixed Angle Specular Reflectance	PerkinElmer Variable Angle Specular Reflectance	PIKE 80 Spec Grazing Angle Specular Reflectance	PIKE 10 Spec Specular Reflectance	PIKE VeeMAX II Variable Angle Specular Reflectance	PerkinElmer Demountable Cells	PerkinElmer Semi-Demountable Cells	Specac Microfocus Beam Condenser	PerkinElmer Sealed Liquid Cell	Specac Variable Temperature Cell	Specac 10cm Demountable Gas Cell	Specac Cyclone™ Gas Cell	Specac Tornado™ Gas Cell	TG-IR Interface	PerkinElmer Application/Resource Pack	
Pharmaceutical	Raw material ID	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	✓
	Counterfeit detection	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Formulation analysis	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Food	Edible oil analysis	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Beverage analysis	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Environmental	Oil in water and soil	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	✓
	Forensic analysis	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Atmospheric pollutants	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Industrial gas analysis	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Petrochemical	Used oil analysis	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	✓
	Biodiesel analysis	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	✓
	Quantification of additives	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Polymer QA/QC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	✓
	Lubricants QA/QC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Oil films on metal surfaces	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

● Ideal
● Alternate
● Not Suitable

BETTER SOLUTIONS FOR DEMANDING APPLICATIONS

The right accessories, consumables, methods and application support are as integral to the success of your laboratory as your instrumentation. That's why we invest heavily in testing and validating our complete portfolio of solutions to ensure that you receive accurate, repeatable results, on-time, every time throughout the lifetime of your instrument.

Whether you are conducting routine raw materials validation or performing the most demanding applications analysis, your success is our top priority. Together, we can help improve your efficiency, control costs, and optimize your analysis.

Are you ready for any challenge?

- **Systems and accessories:** complete range of near-, mid-, far-IR spectrometers and sampling accessories
- **Consumables and supplies:** broad portfolio that runs the full spectrum of applications
- **Training:** on-line, on-site or classroom courses offered globally
- **Service:** preventative maintenance, instrument care, or on-demand repair packages available

For more information, visit www.perkinelmer.com/ftir

PerkinElmer, Inc.
940 Winter Street
Waltham, MA 02451 USA
P: (800) 762-4000 or
(+1) 203-925-4602
www.perkinelmer.com



For a complete listing of our global offices, visit www.perkinelmer.com/ContactUs

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