



Compact, portable, and handheld FTIR solutions for solid and liquid analysis



5500 FTIR

5500 FTIR

Robust performance in a compact design

The Agilent 5500 FTIR instrument is designed to provide reliable results for solid or liquid samples, quickly. Available in three configurations:

- 5500 DialPath: Select one of three factory-calibrated, fixed pathlengths between 30 and 250 μm – ideal for qualitative and quantitative analysis.
- 5500t: Single window set, 100 μm pathlength for specialized oil analysis applications. As easy to use as ATR.
- 5500a: Single and multi-reflection diamond and ZnSe ATRs are available, depending on the application. Single reflection diamond ATR ideal for solids and liquids identification. Multi-reflection ZnSe ATR suited to quantitative liquid analysis.



4500 series portable FTIR

4500 series portable FTIR

Rugged and easy-to-use

These portable FTIR instruments provide onsite analysis of incoming materials and outgoing finished products in the chemical, petrochemical, food and polymer industries. They are also ideal for proactive maintenance programs of high-value equipment and machinery in construction and power production industries. The combination of optics designed for reliability in non-lab environments, innovative sampling interfaces and fit-for-purpose software delivers reliable answers away from the lab. Available in two configurations:

- 4500 DialPath: Quick cleanup by simply wiping the two windows to prepare the device for the next sample.
- 4500a: One, three or nine reflection diamond ATRs and multi-reflection ZnSe ATRs are available, depending on the application.

Handheld FTIR



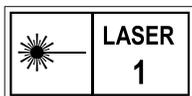
4300 handheld FTIR

The 4300 Handheld FTIR is the first of its kind employing lightweight ergonomics, ease of use, ruggedness, and flexibility into one system. The 4300 weighs approximately 2 kg. Its light weight design and excellent ergonomics make it ideal for use in the field. A variety of sampling interfaces (diffuse reflectance, external reflectance, grazing angle, diamond ATR, germanium ATR) allows the user to easily transition from one sample type to another while on the go. No alignment or adjustments are necessary. Sample types typically include infrared absorbing and scattering surfaces, reflective metal surfaces with coatings and films as well as analysis of bulk materials including powders and granules.

4300 handheld FTIR docking station

The docking station provides a solid benchtop support for the 4300 handheld FTIR. It provides an easy means to measure samples in a fixed location. Originally designed as a way to measure calibration samples, the docking station allows the handheld system to function as a fixed, benchtop spectrometer.

For more information visit the Agilent website at:
www.agilent.com/en/products/ftir



This information is subject to change without notice.

© Agilent Technologies, Inc. 2019
Published in the USA, May 20, 2019
5990-8674EN

Sampling interfaces for the 4300 handheld FTIR



Spherical diamond ATR

ATR is a surface technique, where the sample is brought into contact with the window for direct analysis and only the top 2–3 microns are measured. The ATR interface is ideal for the analysis of solids, liquids, pastes and gels. The interface comprises a diamond window, which makes it impervious to corrosion and scratching.



Diffuse reflectance

The diffuse reflectance sampling capability enables you to tackle a variety of samples including artwork, soils, rocks and minerals, composites, rough plastics, fabrics and corrosion on metal surfaces. In general, if the sample reflects little light, the diffuse reflectance interface will be the sampling method of choice. In many cases, the diffuse reflectance provides the easiest to use sampling interface for the handheld FTIR.



External reflectance

The specular reflectance interface enables the analysis of films and coatings on reflective metal surfaces such as aluminum or steel. The angle of incidence is 45 degrees. The infrared energy passes through the film, reflects off the steel, passes back through the film and is collected by the specular reflectance interface. In addition, it can be used for the analysis of smooth, opaque samples where infrared light reflects off the surface.



Grazing angle reflectance

The grazing angle specular reflectance interface is similar in concept to the specular reflectance interface. The grazing angle interface has an angle of incidence of 82 degrees making it ideal for the analysis of very thin (sub-micron) films. The increased angle of incidence causes more interaction of the infrared energy with the thin sample and has the secondary benefit of increasing the pathlength of the sample. It is ideal for looking at trace contamination on reflective metal surfaces such as cleaning validation studies.



Germanium ATR

The germanium ATR interface is ideal for the analysis of highly absorbing solids and liquids. The surface of the sample is analyzed by bringing it into contact with the germanium crystal. Only the top 0.5 to 2 micrometers is measured, making this technique ideal for strongly absorbing samples such as carbon filled elastomers and rubbers.