Cary 640 FTIR

Data Sheet

Outstanding Value, Excellent Performance, Easy to Use

The Agilent Cary 640 FTIR is an affordable, high performance spectrometer designed to make FTIR spectroscopy easy. With a range of unique, easy to use hardware and software features, it allows even novice users to quickly become productive. It is available in mid-IR or near-IR configurations and is ideally suited to QA/QC applications and identification and verification analyses, and is a perfect educational tool.

The Agilent Cary 600 FTIR Series spectrometers combine Agilent's years of molecular spectroscopy experience with FTIR innovation and expertise acquired from Digilab. The result is a range of instruments that provides the world's best analytical performance under real-world conditions.

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Key benefits

- **Speed and performance**. Fast spectral collection and superior analytical performance provides high-quality spectra in seconds, for productivity and confidence in results.
- **Intuitive and simple software**. Perform all common functions such as method selection, scanning, searching, predicting concentrations and reporting with a simple click of a toolbar button. Resolutions Pro software has the flexibility to boost your productivity by automating and simplifying common tasks, while providing access to advanced processing algorithms if needed.
- **Low cost of ownership**. The sealed and desiccated enclosure employs a 750 g desiccant cartridge (largest in class) to keep components, and spectra, dry. Long life, easy to change components such as sources and detectors, means less downtime, saving time and money.
- **Reliability.** Proven instrumentation, through decades of sound technology and design, backed by a dedicated technical support team, which ensures your instrument is maintained to provide the best results.
- **Intelligent, uncomplicated design**. Simple to operate from technician to expert level minimizes training, getting you up-and-running faster.
- **Spectral searching**. Simple to create spectral libraries and single click search functions for both custom-built or commercial spectral libraries.
- **Create an analyzer**. Change your FTIR into an analyzer by using the 'scripting' feature. Scripting removes all complexity from spectral collection, data interpretation and report generation by prompting an operator when needed.
- **Confidence**. Built-in instrument performance tests provide proof of performance and confidence in your results.

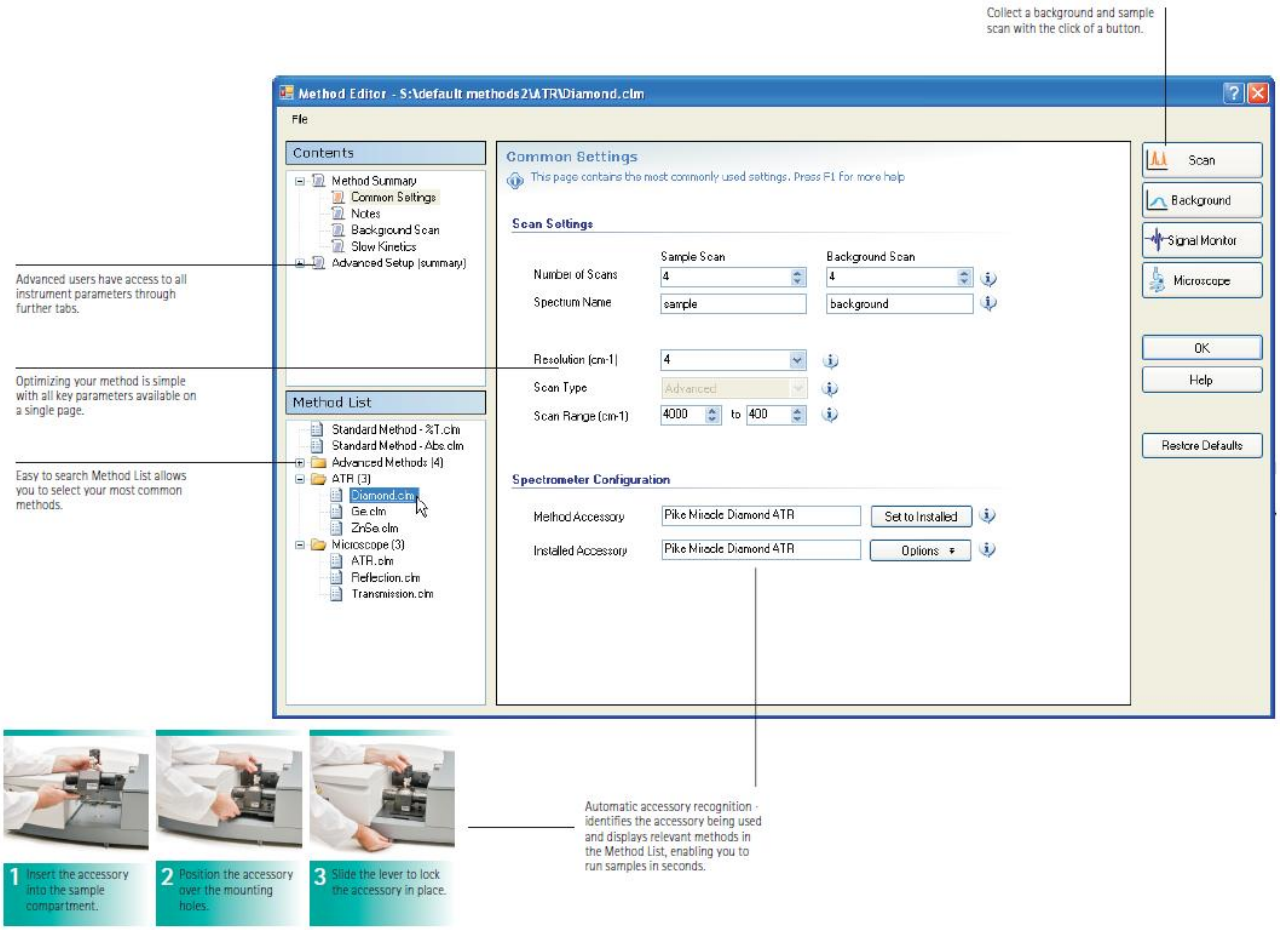
Application solutions

With its high data quality, robustness and ease-of-use, the Agilent Cary 640 FTIR spectrometer allows you to tackle many analytical applications, such as:

- QA/QC of raw material and final products
- Simple in-house spectral database development
- Routine synthesis verification
- Reaction monitoring
- Determination of hydrocarbon contamination in water
- Materials analysis using Agilent's Easy ID QC software
- Simple defect and surface contamination analysis
- Teaching and research laboratory experiments
- Rapid characterization of samples using attenuated total reflectance (ATR) and diffuse reflection (DR)

Scripting

A scripting routine can be used to automatically perform all spectral collection and processing steps, and if desired, it can automatically print a customized report.



Compound identification by spectral searching

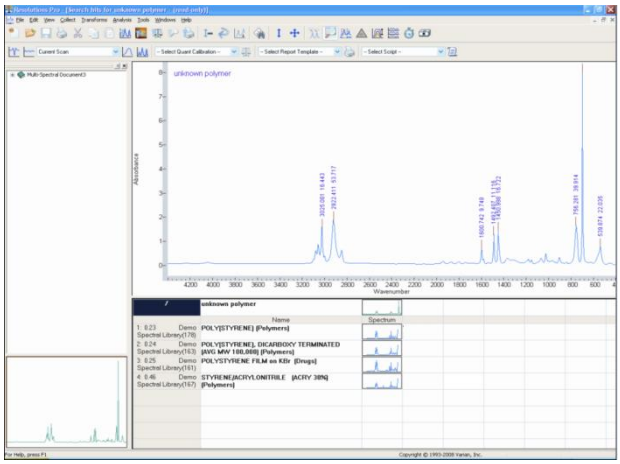


Figure 1. An unknown polymer sample is identified as polystyrene using the spectral search library. Create, edit and manage your own libraries, or use commercially available libraries for maximum flexibility

Quantitative Analysis

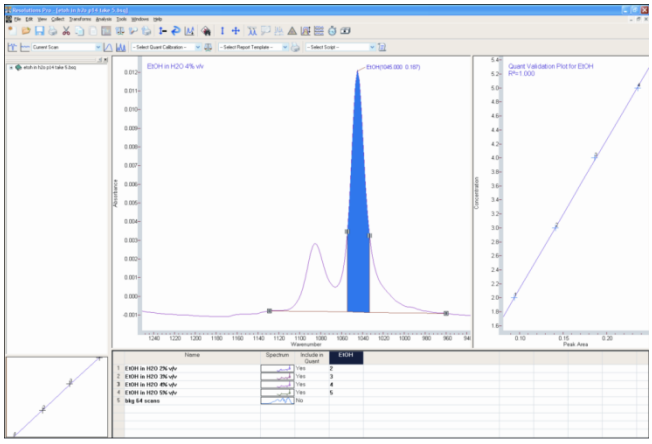
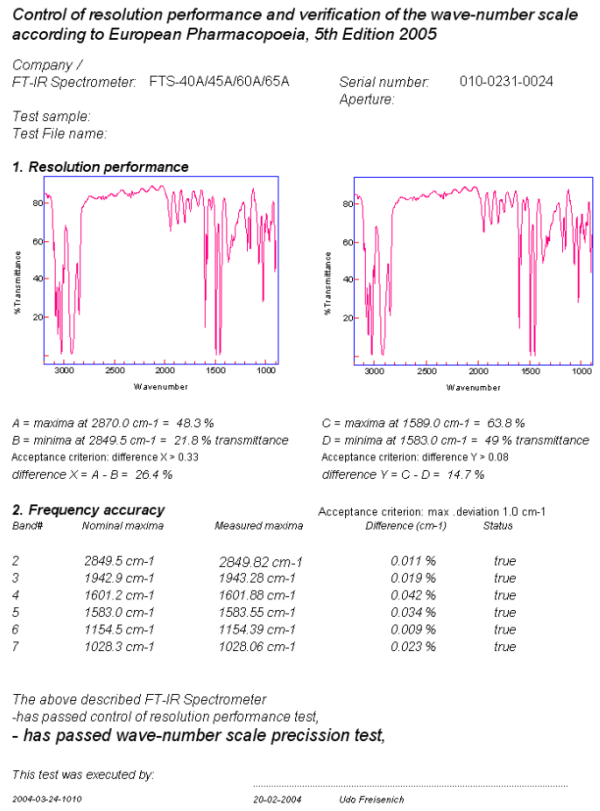


Figure 2. A quantitative calibration plot of ethanol in water. A single click can determine the unknown concentration of a sample

Intuitive post-processing and customizable print reports



Control of resolution performance and verification of the wave-number scale according to European Pharmacopoeia, 5th Edition 2005

Company /
FT-IR Spectrometer: FTS-40A/45A/60A/65A
Serial number: 010-0231-0024
Aperture:

Test sample:
Test File name:

1. Resolution performance

A = maxima at 2870.0 cm-1 = 48.3 %
B = minima at 2849.5 cm-1 = 21.8 % transmittance
Acceptance criterion: difference X > 0.33
difference X = A - B = 26.4 %

C = maxima at 1589.0 cm-1 = 63.8 %
D = minima at 1583.0 cm-1 = 49 % transmittance
Acceptance criterion: difference Y > 0.08
difference Y = C - D = 14.7 %

2. Frequency accuracy

Acceptance criterion: max .deviation 1.0 cm-1

Band#	Nominal maxima	Measured maxima	Difference (cm-1)	Status
2	2849.5 cm-1	2849.82 cm-1	0.011 %	true
3	1942.9 cm-1	1943.28 cm-1	0.019 %	true
4	1601.2 cm-1	1601.88 cm-1	0.042 %	true
5	1583.0 cm-1	1583.55 cm-1	0.034 %	true
6	1154.5 cm-1	1154.39 cm-1	0.009 %	true
7	1028.3 cm-1	1028.06 cm-1	0.023 %	true

The above described FT-IR Spectrometer
-has passed control of resolution performance test,
- has passed wave-number scale precission test,

This test was executed by:

2004-03-24-1010 20-02-2004 Udo Freisenich

Figure 3. A report created from a print composition template. Customizable templates can be conveniently stored and retrieved, to quickly and easily produce reports

The Complete Solution

Satisfy your immediate needs and be prepared for tomorrow's challenges with Agilent's complete range of FTIR accessories, including:

- Attenuated total reflectance (ATR)
- Diffuse reflectance (DR)
- Specular reflectance
- Grazing angle reflectance
- Microscopy and imaging (micro and macro)
- ATR chemical imaging (micro and macro)
- Fiber optics (near-IR)
- TGA-FTIR

Extend the capabilities of your FTIR spectrometer with an Agilent Cary 610/620 FTIR microscope and gain new insight into areas as diverse as polymer chemistry, drug discovery, biomedical research and much more.

Ordering information

Description	Configuration	Part Number
Cary 640 FTIR Mid-IR bundle	Duraglow mid-IR source KBr beamsplitter Peltier-cooled DLaTGS detector	0010091000
Cary 640 FTIR Mid-IR MCT bundle	Duraglow mid-IR source KBr beamsplitter MCT detector	0010091100
Cary 640 FTIR Tropical bundle	Duraglow mid-IR source KBr beamsplitter KRS5 windows Ambient DLaTGS detector	0010091200
Cary 640 FTIR NIR bundle	Tungsten near-IR source Quartz beamsplitter PbSe detector	0010091300

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