Unrivaled. Sensitive. Flexible.

AGILENT CARY 600 SERIES FTIR

The Measure of Confidence

Agilent Technologies

AGILENT CARY 600 SERIES FTIR

Agilent Technologies is your premier resource and partner for molecular spectroscopy. With the addition of the world-renowned Cary product line, encompassing FTIR, UV-Vis-NIR and Fluorescence, Agilent offers you a comprehensive range of molecular spectroscopy solutions.

In a class of their own

The Agilent Cary 600 Series FTIR provides unrivaled analytical performance under real-world conditions. The Cary 660 FTIR is a high-performance spectrometer suitable for routine and research analysis. The Cary 670 and Cary 680 FTIR are designed to provide the highest performance for researchers in fields such as polymers/materials, pharmaceuticals, biotechnology and chemicals.

The Agilent Cary 600 Series FTIR delivers:

- Highest signal-to-noise (S/N) performance — up to four times better than any other research FTIR available.
- Best spectral resolution and fastest kinetics speeds, providing information-rich results without expensive upgrades.
- Full upgrade path from the Cary 660 through to the Cary 680 to ensure you are prepared for future challenges.
- Options to meet any application need such as microscopy and chemical imaging, step-scan and GC-IR.
- Accessory and component recognition for seamless changeovers, and ready-to-use methods.
- Robust and reliable hardware combined with powerful, intuitive software for ultimate productivity.

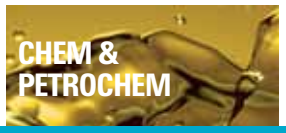
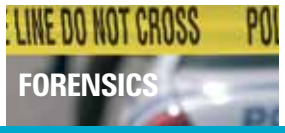
The Agilent Cary 600 Series FTIR are in a class of their own, delivering performance, reliability and flexibility.

Molecular Spectroscopy Innovations

1947 First commercial recording UV-Vis, the Cary 11 UV-Vis	**1954** Release of the Cary 14 UV-Vis-NIR	**1969** First rapid-scanning fourier transform infrared spectrometer, the FTS-14	**1971** First use of a mercury cadmium telluride (MCT) detector in an FTIR	**1982** First FTIR microscope, the UMA 100	**1989** Release of the acclaimed Cary 1 and 3 UV-Vis	**1991** First infinity corrected infrared microscope
1995 Launch of the 8453A, the first small-footprint, full-featured diode-array	**1997** Cary 50 Series released to coincide with 50th anniversary of Cary 11	**1999** Launch of the Cary Eclipse Fluorescence Series	**2000** First ATR chemical imaging system	**2002** Cary 4000/5000/ 6000i research grade UV-Vis-NIR series released	**2008** Launch of the 600 Series FTIR spectrometers, microscopes and imaging systems	**2011** Agilent offers out-of-lab FTIR solutions

FOR YOUR APPLICATION

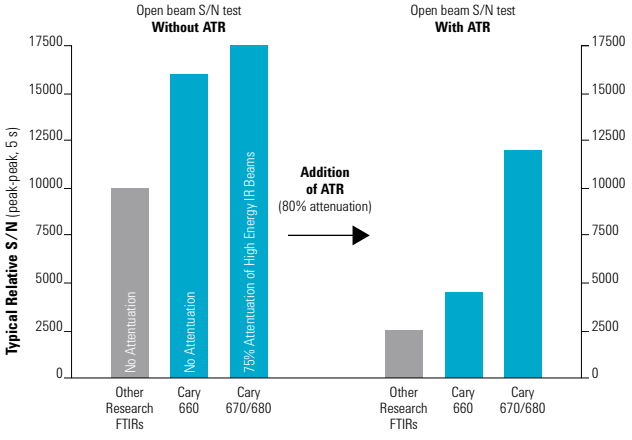
Agilent is committed to providing solutions for your application. We have the technology, platforms, and expert guidance you need to be successful.

				
	ACADEMIA			
Common applications using the Cary 600 Series FTIR	Polymer failure analysis Depth profiling and identification of contaminants Silicon wafer impurity testing Packaging material development and analysis	Multi-component product analysis FAME (fatty acid methyl esters) analysis in biodiesel Materials verification for QA/QC Reverse engineering competitive products Catalyzer characterization *In-situ* reactions	Analysis of paint chips Multi-component fibers identification Screening of counterfeit drugs Detection of minute quantities of explosives	QA/QC of raw materials and finished goods Method development Protein secondary structure determinations Analysis of cell membranes
Common sampling techniques supported by the Cary 600 Series FTIR	Attenuated total reflectance (ATR) Diffuse and specular reflectance Grazing angle reflectance Microscopy and spectrochemical imaging Polarization modulation infrared reflection absorption spectroscopy (PM-IRRAS) Photoacoustic spectroscopy (PAS) Thermal gravimetric analysis infrared (TGA-IR)	Attenuated total reflectance (ATR) Diffuse reflectance Grazing angle reflectance Microscopy and spectrochemical imaging GC-IR Thermal gravimetric analysis infrared (TGA-IR) Transmission	Attenuated total reflectance (ATR) Diffuse reflectance Microscopy and spectrochemical imaging	Attenuated total reflectance (ATR) Diffuse reflectance Microscopy and spectrochemical imaging Microsecond and nanosecond Time-resolved spectroscopy (TRS) Transmission Specular reflectance

THE WORLD'S BEST FTIR

Every component of the Agilent Cary 600 Series FTIR is engineered for performance and usability, ensuring you get the right answer every time.

The Agilent Cary 600 Series FTIR provides enhanced source throughput, beamsplitter and detector efficiencies and reduced instrument noise effects. The result is superior performance and sensitivity, up to four times better than any other research FTIR.

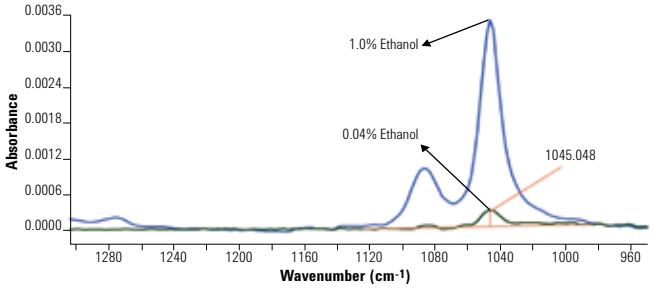


NOTE: Measured at 4cm^{-1} resolution using a DLaTGS detector.
ATR measurements performed using a diamond single bounce ATR.

The S/N difference

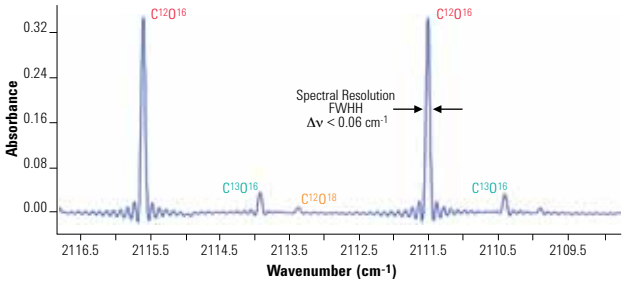
Traditional S/N tests
Performed without a sample or sampling accessory in the instrument, so they are effectively measuring air.

Agilent S/N tests
Measured under real-world conditions, giving you a true indication of performance.



NOTE: Measured at 4cm^{-1} resolution using a DLaTGS detector.

Industry-leading energy throughput
A limit of detection of 0.04% of ethanol in water was achieved with a 15 second scan, using a single bounce diamond ATR on a Cary 670 FTIR.



NOTE: Measured at 0.1cm^{-1} resolution using a DLaTGS detector

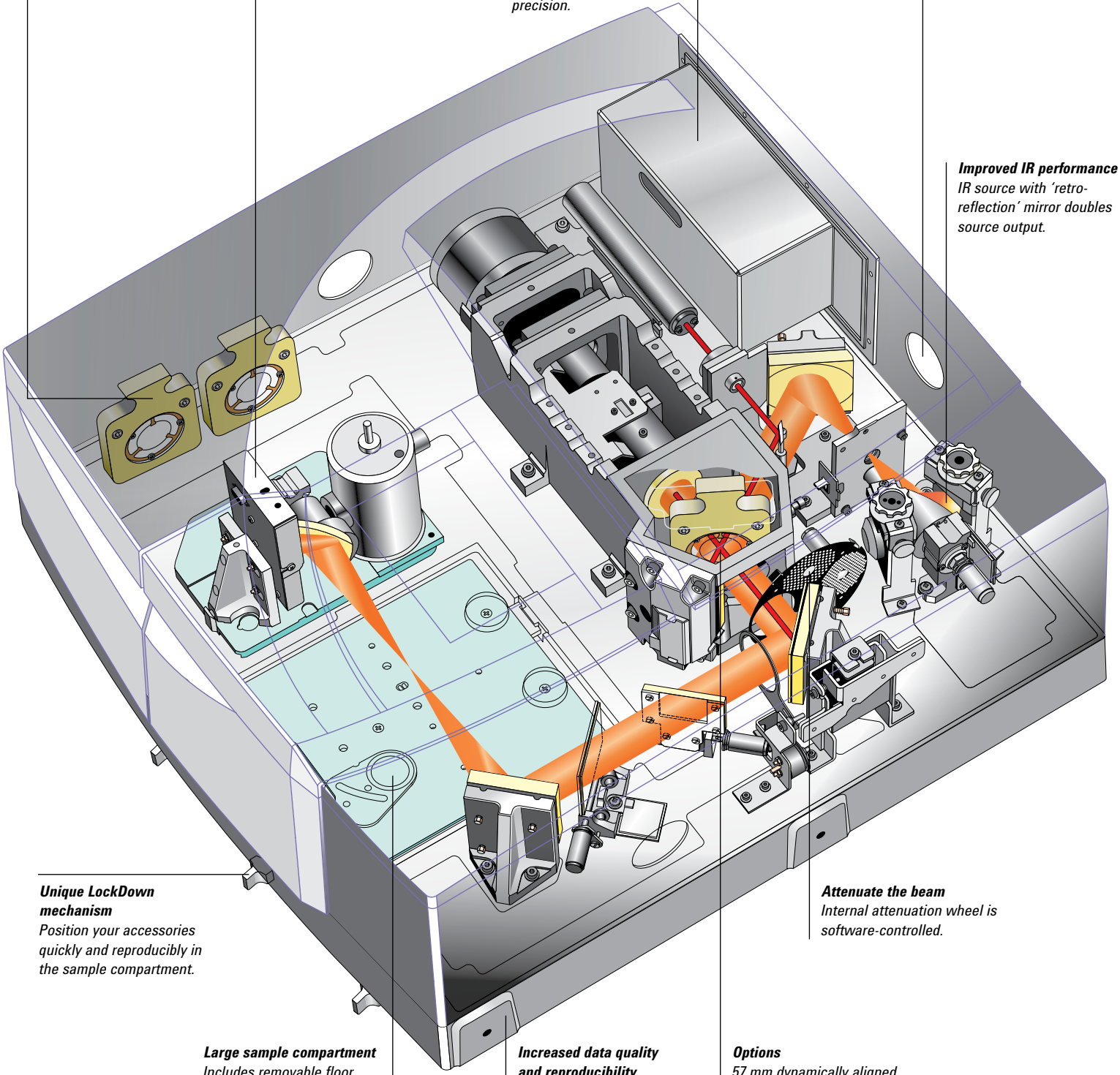
Superior optical design
In this example, measuring the spectrum of CO and its isotopes demonstrates the resolution and sensitivity that can be achieved in seconds.

Internal beamsplitter storage
Provides a dry, protected storage location.

Increased productivity
Easy-to-change detectors and beamsplitters enable quick and reproducible spectral range change-overs.

Superior results
True digital 24-bit dynamic range 600 kHz Delta-Sigma A/D converter delivers maximum S/N, sensitivity, spectral accuracy and precision.

Experimental flexibility
With multiple external/ emission ports.



Improved IR performance
IR source with 'retro-reflection' mirror doubles source output.

Unique LockDown mechanism
Position your accessories quickly and reproducibly in the sample compartment.

Attenuate the beam
Internal attenuation wheel is software-controlled.

Large sample compartment
Includes removable floor plate for maximum flexibility when mounting samples.

Increased data quality and reproducibility
The sealed and desiccated enclosure, or full purge with purge shutter options, minimize environmental disturbances.

Options
57 mm dynamically aligned 60° air-bearing interferometer maximizes throughput and S/N performance (Cary 670/680 only).

Step-scan extends the capabilities for probing samples (advanced PAS, polymer stretching, and TRS), resulting in comprehensive sample characterization.

CONFIDENCE IN THE FUTURE

The Agilent Cary 600 Series FTIR offers an easy upgrade path, so you can be confident that if your needs change, your system can change with them.

The common platform of the Agilent Cary 600 Series FTIR spectrometers ensures you can be prepared for the future.

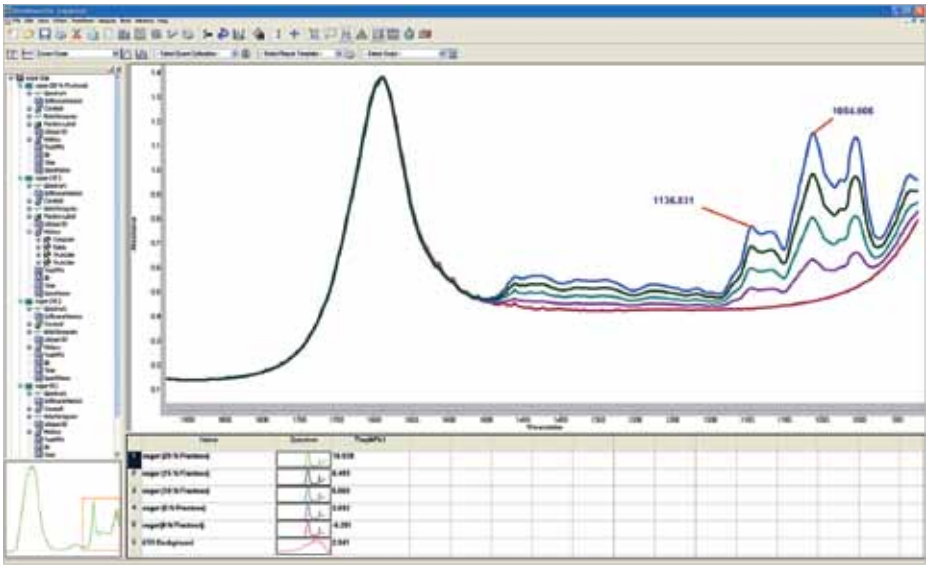
- Customize your instrument to your application, with a choice of sources, beamsplitters, detectors, accessories and software.
- Expand your system by combining FTIR with microscopy and macro analysis, chemical imaging, and FT hyphenated techniques (GC, TGA).
- Extend the functionality of your FTIR with capabilities including step-scan, TRS, PAS, dual A/D and PM-IRRAS.
- Upgrade performance parameters such as IR power, spectral resolution, sensitivity, speed, and spectral range.

Feature	Cary 660	Cary 670	Cary 680
Ultra-high throughput, 57 mm dynamically aligned, 60° air bearing interferometer	•	•	•
Standard spectral resolution typically better than 0.06 cm^{-1}	•	•	•
Ultra-fast kinetics (>110 spectra/s)	•	•	•
Full spectral range, from UV (50,000 cm^{-1}) to far-IR (10 cm^{-1})	•	•	•
Step-scan	•	•	•

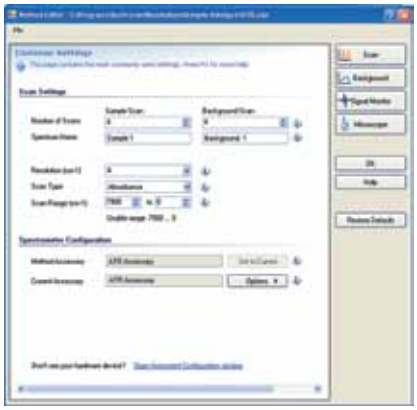
NOTE: Additional components may be required to achieve the complete spectral range.

• Standard • Upgrade

Extend the capabilities of your FTIR spectrometer with Agilent Cary 610/620 Series FTIR Microscopes. The microscopes are suitable for areas as diverse as polymer chemistry, drug discovery and biomedical research.



Unique 'Spectral Spreadsheet' view allows multiple spectra to be overlaid, compared, and their parameters simultaneously tabulated with ease and speed.



'Method Editor' enables users of all levels to easily set up a method.

POWERFUL, INTUITIVE SOFTWARE

Whether you are performing routine measurements or cutting edge research, Resolutions Pro software enables you to acquire, process, analyze and manage your FTIR data quickly and easily.

Intuitive

- Use 'Method Editor' to easily set up a method and start a measurement from one window.
- Spend less time on setup — the accessory and component recognition detects instrument configurations, and ready-to-use methods are provided.
- Drag and drop report elements such as spectra, method parameters and peak tables to customize reports quickly and easily and transfer your data to third party applications.

Data security and integrity

- 'User Manager' enables administrators to set user privileges, providing protection of data and methods from change or deletion.
- Access to ALL original data — including sample and background interferograms and post-collection — ensures data integrity, and allows for data reprocessing.
- Quickly develop new methods by replicating collection parameters and post-run manipulations from stored data.
- Built-in instrument tests provide proof of performance and confidence in your results.
- Perform IQ/OQ tests to assist with operating in regulated environments.

Complete functionality without compromise

- Spectral searching tools assist in unknown identification and material verification. Create, edit and manage your own libraries, or use commercially available libraries for maximum flexibility.
- Advanced data collections such as step-scan, high-speed kinetics, microscopy and imaging, are all available in ONE software package. No expensive add-ons are required.
- Customize — use the built-in scripting tool to simplify analytical tasks for the multi-user laboratory, or to develop advanced routines for challenging applications.

Trust Agilent to keep your lab running at peak productivity

Agilent's Advantage Service protects your investment in Agilent instruments and connects you with our global network of experienced professionals who can help you get the highest performance from every system in your lab. Count on us for the services you need at every stage of your instrument's lifecycle – from installation and upgrade to operation, maintenance and repair.

And if ever your Agilent instrument requires service while covered by an Agilent service agreement, we guarantee repair or we will replace your instrument for free. No other manufacturer or service provider offers this level of commitment.

Further information

For full details of the Agilent Cary range of molecular spectroscopy products, ask for a brochure or visit our web site at www.agilent.com/chem/FTIR/

Cary 610/620 Series FTIR Microscopes
Publication number 5990-7784EN

Solutions for Biomedical and Biological Applications
Publication number 5990-7974EN

Solutions for Polymers and Materials
Publication number 5990-7975EN

Molecular Spectroscopy Portfolio
Publication number 5990-7825EN

Our catalog of new applications is ever growing.

To learn about the latest, contact your local Agilent Representative or visit us at:
www.agilent.com/chem/

Find out how Agilent's Molecular Spectroscopy Solutions can deliver the performance, accuracy and flexibility you need.

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