SPECTRA ANALYSIS

SPECTRA ANALYSIS INSTRUMENTS

DISCOVIR-GC®

DIRECT DEPOSITION FTIR

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www.spectra-analysis.com

The DiscovIR-GC® system, Spectra Analysis Instruments' state-of-the-art Direct Deposition FTIR (dd-FTIR) technology, is a Universal Detector that couples to all major Gas Chromatography and Mass Spectrometry systems. Its proprietary Direct Deposition FTIR (dd-FTIR) technology provides a unique solution for separation and unambiguous identification of complex mixtures.

HOW DOES IT WORK

Upon exiting the GC column, the eluants are deposited as a collimated jet onto a cryogenically cooled sample collection disk. The infrared Zinc Selenide (ZnSe) disk rotates under the deposit tip to result in a spiral track of deposited solid phase samples. A beam of infrared light from an interferometer passes through the disk along the deposition track, and infrared spectral information is acquired by a MCT detector.

The DiscovIR can also be coupled to a GC-MS system, with a simple post column flow splitting it interfaces with dd-FTIR.

In this technique, spectral distortion is eliminated, giving an excellent spectral resolution which provides sharp infrared bands for each molecule.

KEY BENEFITS OF dd-FTIR

- Solid Phase Transmission Spectra.
- Free from rotational broadening observed in traditional Vapor-Phase FTIR.
- Reliable peak assignment for Structural, Positional or Diastereo-isomers.
- Chiral separations for Stereoisomers.
- Obtain pure spectra of each component in a mixture.
- Ideal for multi-component analysis or adulterated samples.
- High-quality, Solid-Phase FTIR spectra acquired at 4 cm^{-1} resolution.

INFRARED PROVIDES ISOMER SPECIFIC SPECTRA

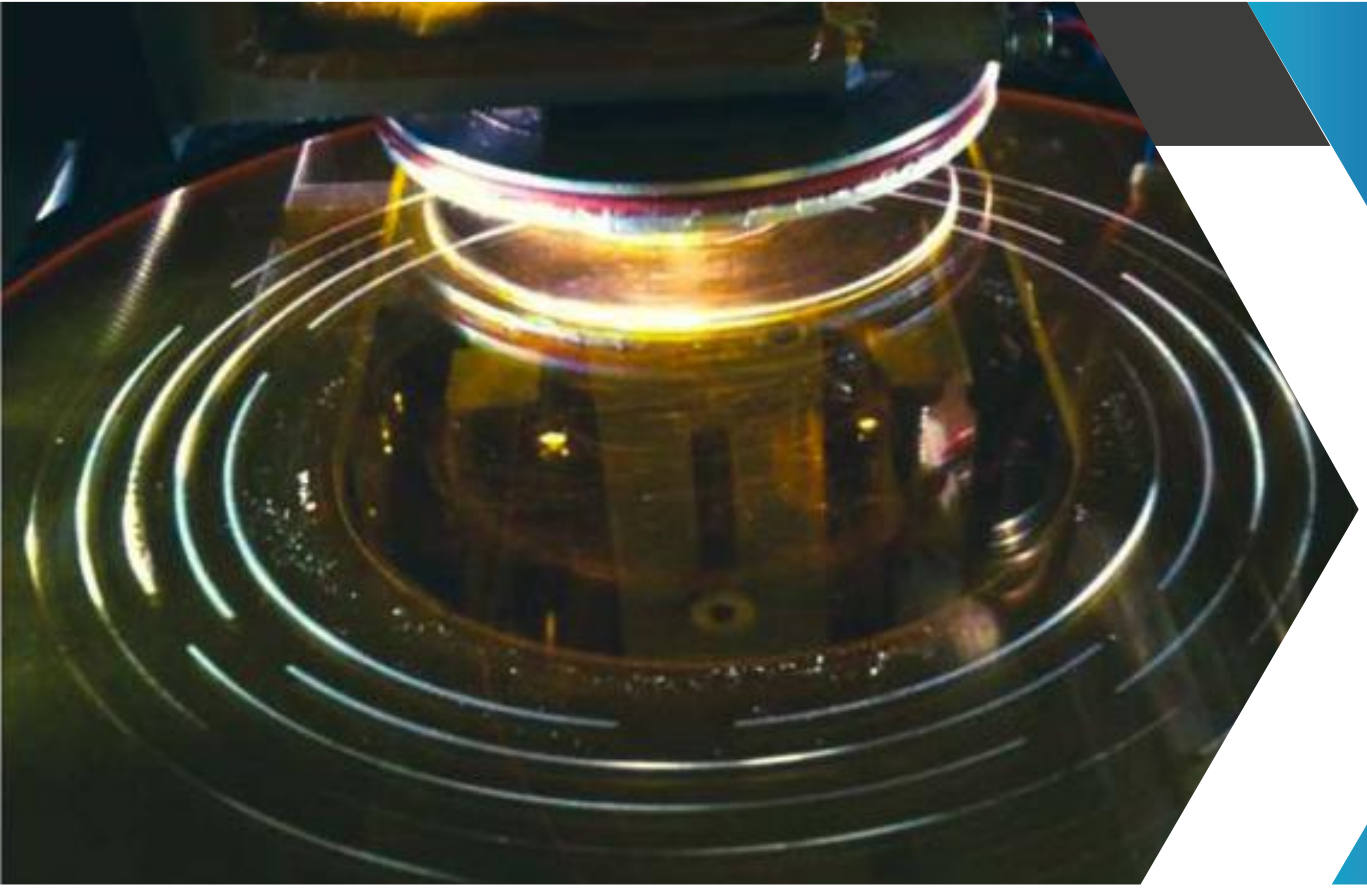
With an infrared spectrum, DiscovIR (dd-FTIR) provides unequivocal differentiation between isomers and other molecules with similar or identical mass spec fragmentation patterns (or qualifier ion ratios). Differentiation or identification of these compounds can be difficult or impossible with Mass Spectrometry alone.

LIBRARY COMPATIBILITY

- Wiley Science Solutions ATR & Transmission Libraries are compatible and available.
- Compatible with commercially available ATR and Transmission libraries.
- You may also build your customized library with spectra gathered by the DiscovIR.

POLYSTYRENE CALIBRATION

Fast and convenient routine calibration using a NIST traceable polystyrene standard.



SYSTEM OVERVIEW

OPERATING PRINCIPLE	Direct deposition of column eluant on cryogenically cooled Zinc Selenide (ZnSe) sample disc
DETECTION METHOD	Built-In FTIR
IR RANGE	Mid – IR; 4000 – 700 wavenumbers
RESOLUTION	4 cm^{-1}
SPECTRUM TYPE	Transmission through disc and Solid-Phase sample
DISC TEMPERATURE CONTROL	-70°C to + 50°C (indicated)
DISC SPEED	Tunable. Default 6mm/min
DISC CAPACITY	Up to 20 Hrs of Chromatography
LN_2 USAGE	2 Liters for cool down. 1 Liter per hour of operation.
UNATTENDED OPERATION	10 Hours Standard, customizable upto 18 Hrs. Autosampler compatible.
IR DETECTOR	0.1 x 0.1 mm MCT
DIMENSIONS	79 x 43 x 69 cm 31 x 17 x 27 in 55 KGs / 121 Lbs

DATA & CONTROL STATION

PLATFORM	Standard Desktop Computer. Microsoft Windows 11 Pro.
PROPRIETARY SOFTWARE	DiscovIR10™ Software

GAS CHROMATOGRAPH CONFIGURATION

GC FLOW RATES	0.1 to 5 ml/min
GC TEMPERATURES	Programmed upto 320°C
GC TYPE	Compatible with any GC or GC-MS

MAINTENANCE & SUPPORT

One-Year Standard Warranty with a variety of follow-on Service & Maintenance Contracts available.
Training Courses available.
Remote Diagnostic Capabilities.
Global Service Support Network.

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