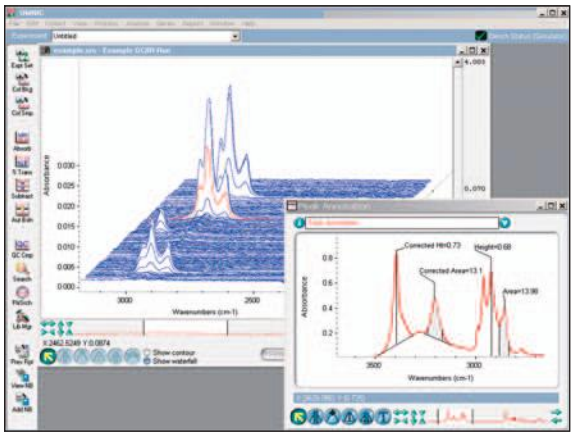
Product Specifications

The GC-IR Interface for Thermo Scientific Nicolet™ FT-IR spectrometers, when combined with OMNIC™ Series software, provides superior sensitivity, performance, and ease of use. The system couples the separation capability of gas chromatography (GC) with the specific identification power of Fourier transform infrared (FT-IR).

GC-IR Interface for Nicolet FT-IR Spectrometers

A high-performance, easy-to-use approach to GC-IR separation and identification

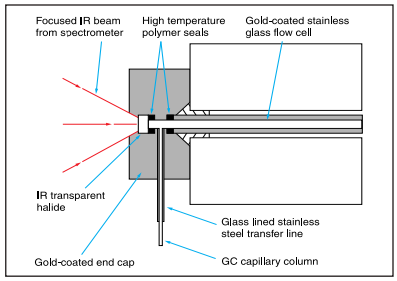


The combination of the GC-IR Interface with Thermo Scientific Nicolet FT-IR spectrometers provide an effective tool for analyzing multi-component organic samples, including solvents, reactants, pharmaceuticals, petrochemicals, and environmental samples.

The GC-IR Interface is optimized for analyzing small elution volumes found in today's high-resolution capillary columns. The system achieves excellent sensitivity, typically in the low nanogram range for volatile species.

Advanced Features

Many advanced features of the GC-IR Interface translate into performance advantages for the user. The design permits direct insertion of the capillary column into the lightpipe, eliminating component degradation and peak broadening in the transfer line. The gold-coated lightpipe with long pathlength and small inside diameter



maximizes the infrared response for low nanogram sensitivity.

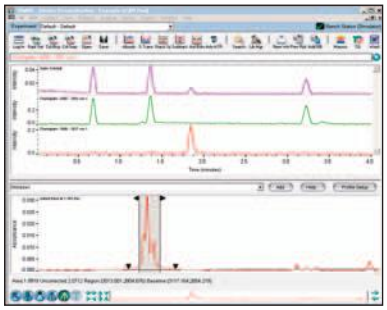
The patented MCT-A detector contributes to the system's unmatched sensitivity and dependability. Smart detector's are pinned-in-place and can be interchanged with the bench detector without alignment. The plug-and-play feature of these smart detectors provides instant recognition of the detector and its location. They feature a patented mechanism to prevent the formation of ice on the detector element and provide an 18-hour liquid hold-time.

Product Specifications

The GC-IR Interface can be configured on the right or left side of the Nicolet FT-IR spectrometer. Control of GC, IR data collection and processing is integrated on a single PC.

OMNIC Series Software

The GC-IR Interface uses Windows®-based OMNIC Series software for data collection and manipulation, incorporating the power and control needed to perform advanced GC functions with the simplicity of the OMNIC software interface. The graphical user interface with point-and click operations makes the software extremely intuitive.



The software also provides a real-time display of the Gram-Schmidt reconstruct, (IR Chromatogram) Chemigrams, and infrared spectra while data are being collected. Data are stored as multi-files, allowing you to process all data in the set using a single software command. You can also extract single spectra or coadded regions for compound identification by using our wide range of available vapor phase spectral libraries. 2-D contour and 3-D waterfall display of GC data provides enhanced processing capabilities for complex sample mixtures.

The high-performance GC-IR Interface for Nicolet FT-IR spectrometers, combined with the powerful OMNIC Series software, provides the sensitivity needed for difficult samples and the processing efficiency necessary for rapid analysis.

Specifications

Optics and Hardware

Baseplate: precision-cast baseplate with Lock-in-Line connection to the right or left side of Nicolet FT-IR spectrometers, providing precise optical alignment of the GC-IR Interface

Optics: efficient optical design using three mirrors to direct the collimated beam from the spectrometer, through the gold-coated lightpipe and onto the MCT-A detector located in the GC-IR Interface

Lightpipe: gold-coated glass flow cell with gold-coated alloy end caps; lightpipe seals made of a high-temperature polymer capable of operating continuously at 325 °C; low dead volume design (15 cm length, 1.0 mm ID) that produces the highest absorbance with minimal peak broadening

Transfer Lines: stainless steel, glass-lined and thermally insulated; direct insertion of the GC column, which provides a totally inert passage of chromatographic components into the gold-coated lightpipe

Make-up Gas: the addition of an adjustable make-up gas controller to the GC oven to maintain linear velocity and chromatographic peak integrity within the lightpipe; make-up gas flow around the outside of the column, directing the column effluent throughout the lightpipe; typical flow: 0.20 ml/min

Temperature Control: digital, solid-state temperature controllers for individual control of lightpipe and transfer line temperature; software selectable from ambient to 325 °C

Detector: stainless steel; recommended: high-sensitivity MCT-A (range 11,700 – 600 cm^{-1}); optional: MCT-B (range 11,700 – 400 cm^{-1}); smart design with plug-and-play interchangeability with the detector position on the spectrometer with no alignment required; a patented mechanism feature to prevent the formation of ice on the detector element and provide an 18-hour liquid nitrogen hold-time

Performance Characteristics

Scan Speed: able to collect, co-add up to 7 scans at 8 cm^{-1} spectral resolution, process, display, and store to hard disk IR spectra and IR chromatograms in real-time in less than 1 second*; production of spectra from double-sided interferograms for the highest signal-to-noise ratio

Peak-to-Peak Noise: less than 1.0 x 10^{-4} Abs. peak-to-peak noise measured at 8 cm^{-1} resolution with a 4-second collection time using the KBr beamsplitter, MCT-A detector, and lightpipe at 200 °C

** A minimum of a 400 MHz Pentium® PC is required to achieve these results.*

Physical Characteristics

Power Requirements: (GC-IR Interface only) 120 V, 20A, 60 Hz; or 240 V, 10A, 50 Hz

Power Consumption: (GC-IR Interface only) 1,650 watts maximum

Interface Dimensions: 41 cm (W), 67 cm (D), 334 cm (H)

Weight: 12 kg

GC Oven Compatibility and Control

Compatibility: interfaces to TRACE GC Ultra ovens; for compatibility with other GC ovens – please inquire

Control: automatic start of series data collect with the selection of start on the TRACE GC Ultra oven

Vapor Phase Spectral Libraries

- Aldrich® Vapor Phase Spectral Library with 8,654 spectra
- EPA Vapor Phase Spectral Library with 3,300 spectra
- Flavors and Fragrances Spectral Library with 667 spectra
- Vapor Phase Hazardous Chemical Spectral Library with 304 spectra

Available in deresolved or true 4 cm^{-1} spectral resolution

Warranties

A standard warranty is included. Please contact us for further information on warranty extensions and service contracts.

Thermo Electron Scientific Instruments LLC, Madison, WI USA is ISO Certified.

PS50455_E 04/08M

Africa +43 1 333 5034 127
Australia +61 2 8844 9500
Austria +43 1 333 50340
Belgium +32 2 482 30 30
Canada +1 800 530 8447
China +86 10 8419 3588
Denmark +45 70 23 62 60
Europe-Other +43 1 333 5034 127
France +33 1 60 92 48 00
Germany +49 6103 408 1014
India +91 22 6742 9434
Italy +39 02 950 591
Japan +81 45 453 9100
Latin America +1 608 276 5659
Middle East +43 1 333 5034 127
Netherlands +31 76 579 55 55
South Africa +27 11 570 1840
Spain +34 914 845 965
Sweden/Norway/Finland +46 8 556 468 00
Switzerland +41 61 48784 00
UK +44 1442 233555
USA +1 800 532 4752
www.thermo.com

Thermo SCIENTIFIC