700 FTIR
Fourier Transform Infrared Analyzer

The 700 Series FTIR Analyzer delivers fast, accurate analysis of virtually any gas that has an infrared absorption spectrum

Features

- Proven, rugged interferometer with gold Mirrors
- No liquid nitrogen required
- 0.8 Wave number (cm^{-1}) resolution
- Heated sample cell (50° or 191° C)
- Internal, rack mount, desktop, PC or laptop controlled with fully automated Opus spectroscopy software
- High Sensitivity with 10^{-2} meter optical path
- Low cost of acquisition and operation

Applications

- Process control
- Combustion efficiency
- Stack gases (CEM/MACT)
- VOC abatement/scrubber efficiency
- Agricultural emissions
- Pharmaceutical
- Semiconductor
- Vehical emmisions
- CO_2 purity
- Ammonia slip
- Gas purity
- Greenhouse gases
- Biomass/landfill gas

Options

- Analog output module
- Intelligent multi-point sampler, heated or unheated
- Heated sampler
- Data logging sofware

California Analytical Instruments
1312 West Grove Avenue, Orange, CA 92865 • Phone: 714-974-5560 • Fax: 714-921-2531
www.gasanalyzers.com

700 FTIR
Fourier Transform Infrared Analyzer

Gases Analyzed

- Carbon Dioxide
- Nitric Oxide
- Sulfur Dioxide
- Hydrogen Chloride
- Methane
- Butane
- Ethanol
- Propylene
- Acetylene
- Dilchloroethylene
- Methyl Ethyl Ketone
- Sulfur Hexafluoride
- Phosgene
- Carbon Monoxide
- Nitrogen Dioxide
- Nitrous Oxide
- Propane
- Ethene
- Ethylene
- Toluene
- Chloroform
- Ethyl Benzene
- Perchloroethylene
- R134A
- Ethylene oxide
- More available contact CAI for other

Technology

The 700 Series FTIR is based on Fourier Transform Infra-red Spectroscopy. Nonsymmetrical gas phase molecules absorb IR light which in turn causes the molecular bonds to stretch, bend, or rotate. This absorption is used to measure and quantify several chemical components simultaneously. An IR source emits radiation in the range of 7500 to 375 cm^{-1}. The IR radiation is split in a Michelson nterferometer where half of the light passes through to a fixed mirror and the other half is reflected towards a moving mirror.

The two beams recombine and pass through a gas cell where the sample absorbs light at molecule specific frequencies. The remaining light is measured with a DTGS detector and Fourier transformed to convert from time domain to frequency domain producing a single beam spectrum which is ratioed with a baseline spectrum and produces an absorbance spectrum. This absorbance spectrum is quantified with chemometrics to produce a concentration value.

Specifications

Analysis Method: Fourier Transform Infrared (FTIR)
Components: Multiple Gases
Interferometer: Rocksolid™, Permanent Alignment,
High Stability with Cube Corner Reflectors and Non-wearing Bearing for Long Life
Detector Type: DTGS
Ranges: From ppb to percent level (Gas blend dependent)
Response Time: From approximately 20 seconds to 5 minutes depending on sensitivity
Spectral Resolution: 0.8 cm^{-1} to 128 cm^{-1}
Spectral Range: 4300-600 cm^{-1}
Scan Time: 1-300 Seconds
Control: PC, Windows XP or higher
Sample Flow: Typically 0.2 to 5 lpm
Ambient Temperature: 5° to 40°C
Ambient Humidity: Less than 80% RH (Non-condensing)
Gas cell: 316 Stainless Steel (50°C to 191°C)
Volume: 550 cc, Effective Pathlength: 10.2 meters
Windows: ZnSe, others available,O-rings: Parafluor
Power Requirements: 115/230 (+/- 10%) VAC; 50/60Hz,
Dimensions: 10.5Hx19”Wx28”D
Weight: Approximately 90 lbs.

California Analytical Instruments
1312 West Grove Avenue, Orange, CA 92865 • Phone: 714-974-5560 • Fax: 714-921-2531
www.gasanalyzers.com