The 600 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)
- Rack-mount PC or laptop-controlled with OPUS software
- High sensitivity with 4.3-meter optical path
- Low acquisition and operating cost
- Options include:
  - Pressure compensation
  - Analog output module
  - Intelligent multi-point sampler
  - Sample accessories

Applications

- Process control
- Stack gases (CEM/MACT)
- VOC abatement/ scrubber efficiency
- Vehicle emissions
- Ammonia slip
- Gas purity
- Agricultural emissions
- Greenhouse gas
- Biomass/landfill gas

- Carbon Dioxide
- Carbon Monoxide
- Nitric Oxide
- Nitrogen Dioxide
- Sulfur Dioxide
- Nitrous Oxide
- Hydrogen Chloride
- Propane
- Butane
- Ethane
- Ethanol
- Ethylene
- Propylene
- Toluene
- Dichloroethylene
- Ethyl Benzene
- Methyl Ethyl Ketone
- Formaldehyde
- Sulfur Hexafluoride
- Phosgene
- Vinyl Chloride

Enviro Technology Services Ltd
part of CuraTerrae

info@et.co.uk
tel: +44 (0) 1453 733200
www.et.co.uk

600 FTIR

Fourier Transform Infrared Analyzer

Description

The California Analytical Instruments 600 FTIR Analyzer provides fast, continuous and stable analysis of virtually any gas that has an infrared absorption spectrum. The proprietary heated sample cell enables the instrument to accommodate hot samples containing high levels of moisture.

The 600 FTIR can serve a variety of analytical applications, including diesel emissions, CEM monitoring, ammonia slip, SCR inlet/outlet monitoring, process monitoring and others.

Unlike other FTIR analyzers, the 600 FTIR does not require liquid nitrogen, eliminating the need to constantly fill LN2 dewars and the associated safety issues. Its small footprint and light weight allow easy installation and transportability when required.

Method of Operation

The 600 FTIR Analyzer is based on Fourier Transform Infrared Spectroscopy. Nonsymmetrical gas phase molecules absorb IR light, causing 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 an interferometer, where the light is split toward two moving corner-cube mirrors. The two beams recombine and pass through a 4.3-meter multi-reflection 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 the time domain to the frequency domain. This produces a single-beam spectrum that is ratioed with a baseline spectrum, producing an absorbance spectrum. The absorbance spectrum is quantified with PLS chemometrics to produce a concentration value.

OPUS Software Package

The 600 FTIR OPUS software is fully automated for exceptional ease of use. It offers features such as spectrum calculator, absorbance-to-transmission conversion, automatic baseline correction and peak picking. It allows multiple spectra to be manipulated at the same time.

Specifications

Analysis Method – Fourier Transform Infrared (FTIR)
Components – Multiple gases
Interferometer – Rocksolid,™ permanent alignment, high stability with cube-corner reflectors and non-wear bearing for long life
Detector Type – DTGS
Ranges – From ppb to percent
Response Time – From approximately 20 seconds to 5 minutes, depending upon sensitivity (typically 1 minute)
Spectral Resolution – 0.8 cm^{-1} to 128 cm^{-1}
Spectral Range – 305-7500 cm^{-1}
Control – PC, Windows XP or higher
Sample Flow – Typically 0.2 to 10 lpm
Ambient Temperature – 5° to 40°C
Ambient Humidity – Less than 90% RH (non-condensing)
Power Requirements – 115 VAC/60Hz or 230 VAC/50Hz
Dimensions – 7.0”H x 19”W x 24”D
Weight – Approximately 60 lbs.

Gas Cell

Construction – 316 Stainless Steel (50°C or 191°C)
Volume – 880 cc
Effective Pathlength – 4.3 meters
Mirrors – Gold-plated SS 316
Windows – ZnSe standard, others available
O-rings – Parafluor
Inlet/Outlet Connections – 1/2” tubing
Purge Fittings – ¼-inch Swagelok® compression

Specifications subject to change without notice.

Enviro Technology Services Ltd
part of Cura Terrae
World Leading Environmental Monitoring Systems
Registered Office: Enviro Technology Services Ltd, King isher Business Park, London Road, Stroud, Gloucestershire, GL5 2BY, UK.
Registered in England No. 1726773
info@et.co.uk
tel: +44 (0) 1453 733200
www.et.co.uk