

FTIR SPECTROMETER PRODUCT SERIES

Professional Infrared Spectroscopy Solution



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ATR



Global Distribution Network

Company Introduction

Lambda Scientific was founded in 2005, with headquarters in Adelaide, Australia and has been manufacturing a wide range of high-quality spectrometers since then. As a leading international analytical instrument manufacturer, we are committed to providing high-quality, cost-effective solutions and on-time delivery. Product quality and excellence in manufacturing are the key values that guide our business.



Product Introduction

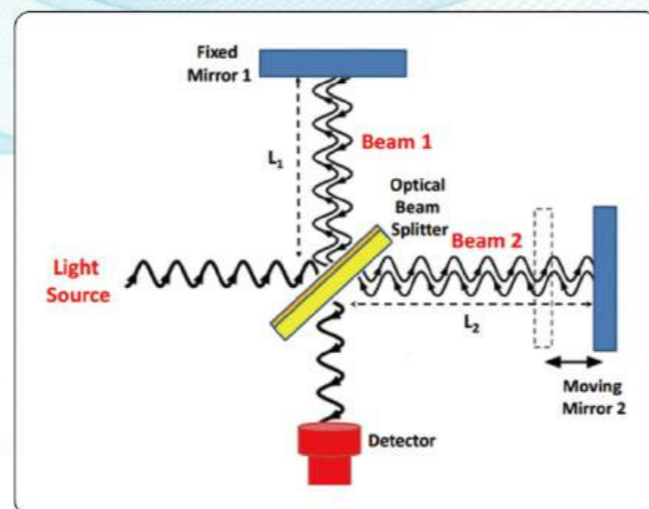
FTIR-7600S



- Easy to Operate
- Fast Scanning Speed
- High Accuracy
- Powerful Software
- Simple Maintenance
- USB Interfacing
- Cost Effective

The FTIR-7600S is suitable for a wide range of applications for solids, liquids, and gases. Its user-friendly design, added to its operational simplicity, superb performance, durability, and low maintenance, make it an excellent choice for your analytical requirements.

It has a rugged design with a sealed Michelson interferometer and detector unit for better moisture resistance. And it is flexible for use in transmission mode or with ATR.



Description

Description	Specifications
Wavenumber range	7800-350 cm^{-1}
Resolution	1 cm^{-1}
Signal to Noise	40000:1 (resolution@4 cm^{-1} , sample and background scan for 1 min@2100 cm^{-1}) with optional DLaTGS Detector
Detector	High-performance infrared detector
Beam splitter	KBr substrate germanium plated, with moisture-proof coating
Light source	Long-life high-intensity air-cooled infrared light source, energy ratio better than 30%
Linearity	0.1% T
Power	AC100-240V, 50/60Hz
Dimensions	430 x 360 x 200 mm
Weight	15Kg
Interface	USB 2.0
Support System	Windows 7 Professional, Windows 10 Professional

FTIR-7600S is an indispensable analysis tool for various application fields including Agriculture & Food, Biology, Pharmaceuticals, Chemicals & Polymers, Environmental, Mining, Materials, Semiconductors, etc.

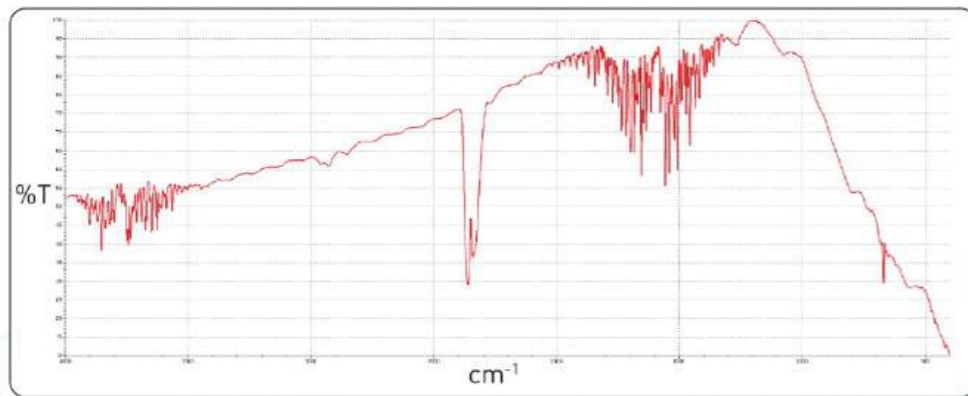


Product Features

Efficient optical path system design

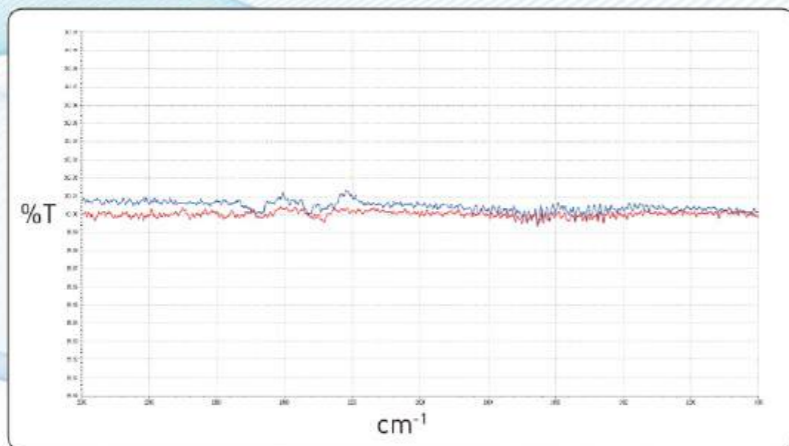
High-intensity infrared light source module design

By optimising the design of the infrared light source, the background energy value is increased significantly, which enhances the infrared radiation energy in the low-frequency and high-frequency bands and makes the energy distribution in the whole band (7800-350cm⁻¹) more balanced.



High performance interferometer module design

While inheriting the stability advantages of the corner cube mirror interferometer, the optical system is further optimised so that the FTIR-7600S has a signal-to-noise ratio better than 40000: 1 (with optional DLaTGS Detector), which, in practice, makes it better at detecting weak signals.

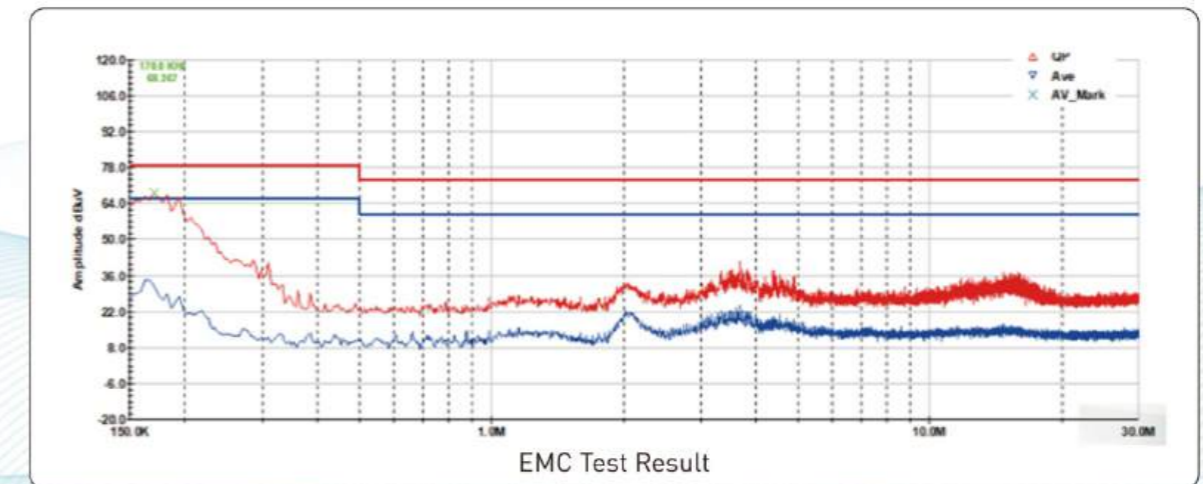


— FTIR-7600S SNR spectrogram
— FTIR-7600 SNR spectrogram

Anti-electromagnetic interference design

On the one hand, a more optimised electromagnetic interference design reduces external electromagnetic radiation and, on the other hand, effectively improves the anti-electromagnetic interference ability of the system itself so as to meet the requirements of electromagnetic compatibility design specifications (EMC).

Remark: The EMC test is also called an electromagnetic compatibility test, which specifically includes electromagnetic field interference (EMI) and anti-interference ability (EMS). This is one of the most important indicators of product quality.



Application Mode & Accessories

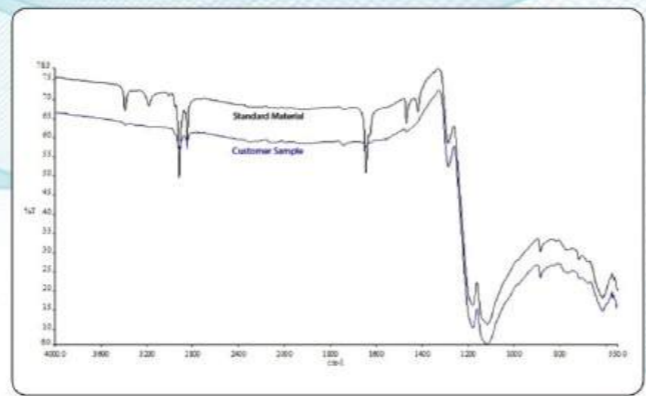
Moisture-proof design

- Larger capacity desiccant cylinder structure design, which greatly reduces the frequency of desiccant replacement
- Excellent moisture-proof design of interferometer and detector, effectively protecting the optical system and detection system of the infrared spectrometer from the interference and corrosion of external moisture and harmful gases



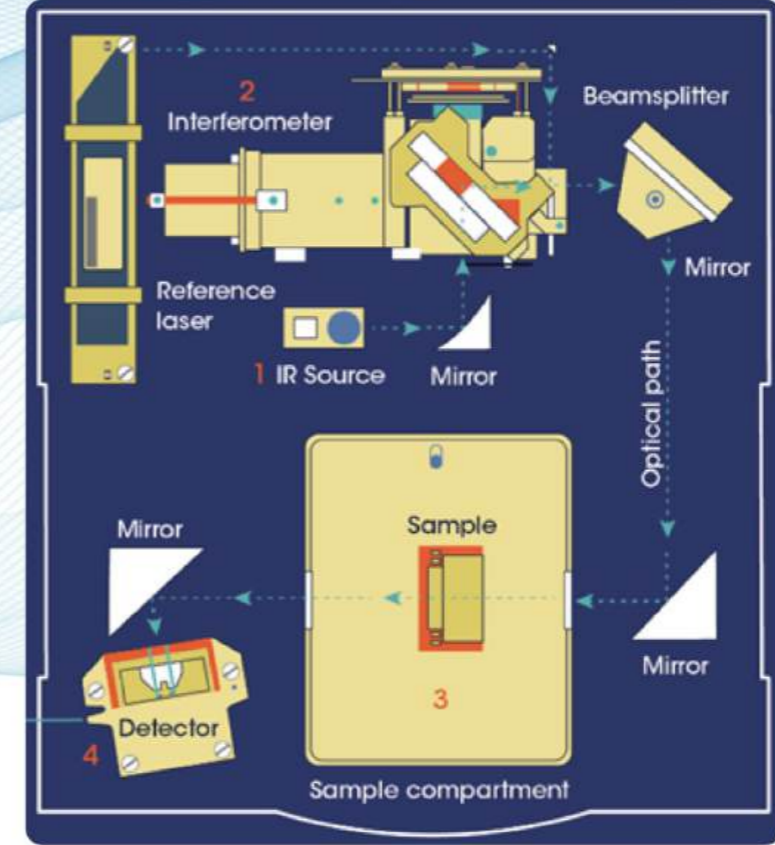
Advanced software

Our advanced software, the 'FTIR workstation', searches the library and compares the generated spectrum within a few seconds giving the result and quickly identifying the material.



Transmission FTIR

In this traditional form of sample measurement, the user simply places a sample directly into the sample compartment, and we have different accessories available to measure liquids, solids and gasses.



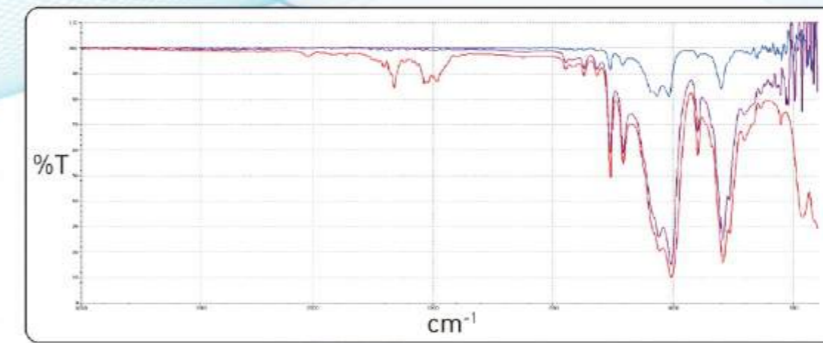
HF-7 Liquid Cell



HF-11 Gas Cell

The following ATR crystal materials are available

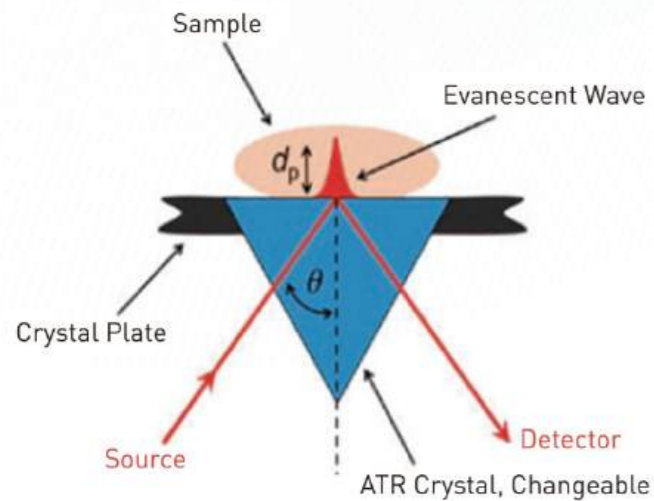
Crystal plate	Application	Hardness (kg/mm ²)	Cutoff cm ⁻¹ Spectral range	Refractive index @1000cm ⁻¹	Depth of penetration @45° (µm)	pH Range of sample
ZnSe	General purpose	120	520	2.4	2.00	5-9
Ge	General purpose and carbon filled or rubber	520	575	4.0	0.66	1-14
Monolithic Diamond	Ideal for hard samples, acids or alkaline	5700	525	2.4	2.00	1-14



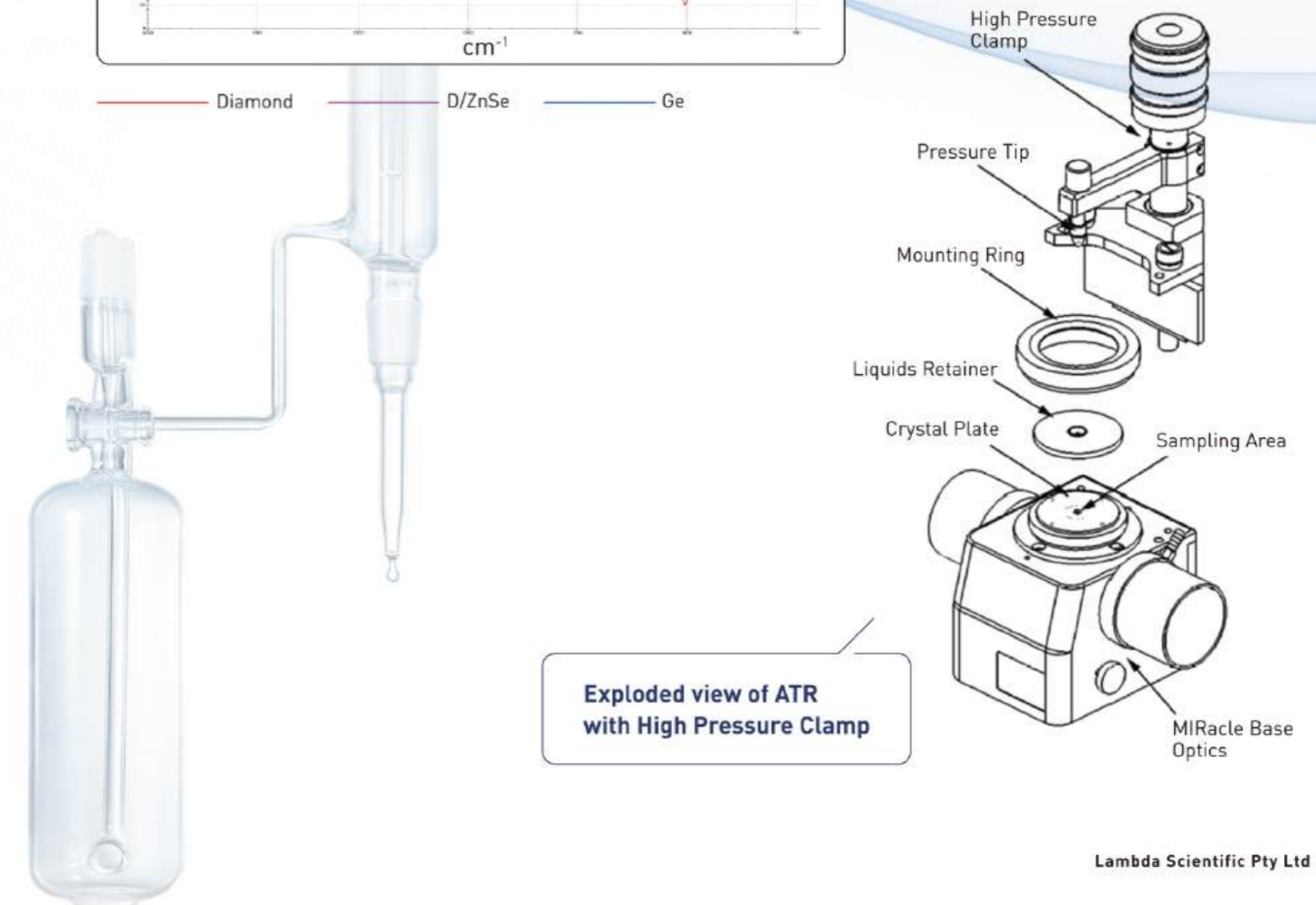
— Diamond — D/ZnSe — Ge

ATR

Attenuated total reflectance (ATR) is the most widely used sampling methodology for Fourier transform infrared (FTIR) spectroscopy. We have universal ATR as well as Diamond ATR that quickly and easily measures a broad range of sample types, including liquids, solids, powders, semisolids, and pastes, making your sample preparation process much easier.



The infrared light passes through a crystal of a certain material (diamond, ZnSe). It interacts with the sample, which is pressed onto the crystal. A spectrum is obtained from this, which shows all the substance-specific characteristics.



Exploded view of ATR with High Pressure Clamp