

## ALPHA FT-IR Spectrometer

## ATP8900plus

### Features

- Spectral Range:7800-350cm<sup>-1</sup>
- Spectral Resolution 1cm<sup>-1</sup>Solid laser:lifetime >10 years
- Optical system is designed with gold mirror,improving reflectivity by >5% than traditional aluminum mirror
- Super sensitivity and reliable temperature controlled DTGS detectors
- Sliding-type fastener design for quick replacement of ATR, transmission and other modules
- Can be equipped with tablet PC, battery and carrying case

### Application

- **Environmental industry:** FTIR has been widely applied to environmental monitor, environmental chemistry, and environmental pollution.FTIR can online monitor gas pollution of H<sub>2</sub>O , NO<sub>x</sub>(NO<sub>2</sub> , NO , N<sub>2</sub>O) , HF, SO<sub>2</sub>, CO, HCl ,NH<sub>3</sub> , CO<sub>2</sub> etc. Particles in air pollution and their types and concentration. It also can monitor environmental equipment, say vacuum cleaner, desulfurization and depickle equipment.
- **Criminal investigation:** Fast detect explosives export field evidence in dangerous site, black powder, nitrolite, TNT, hexogen, PETN...
- **Drugs enforcement:** drugs screen morphine, heroin, Cocaine, Ice (crystal methamphetamine) , Ketamin , new psychoactive substances (nps)
- **Classification and identification of gemstones and jade**
- **QC check materials compliant with standards or not**
- **Identity unknown materials, if the pollution to the material detected can be auto match in the library and know the pollution material name**

### Description

ATP8900Plus Series is self-designed FT-IR device with compact design fit to field application.

It comes with full software features and add-ons. Unique plug-and-play design helps increase your productivity.And the sturdy aluminum alloy case and moisture-proof ZnSe beam splitter allow ATP8900Plus works indoors and outdoors.Whether you are a novice or expert users, you can operate it to get high quality results quickly.

It's widely applied to online in real time monitor industrial gases, identify unknown narcotics, drugs and explosives by force enforcement, identify oil product quality, manufacturer, gemstones classification, relics and museum antiques.

ATP8900plus has strictly satisfied standards of Design Qualification, Installation qualification, Operation Qualification and Performance Qualification verification.



Parameters	
Spectral Range	7800~350 $\text{cm}^{-1}$
Resolution	< 1 $\text{cm}^{-1}$
SNR	40,000 : 1 1 min sample measurement, 4 $\text{cm}^{-1}$ , peak-to-peak
Wavenumber Accuracy	< 0.01 $\text{cm}^{-1}$
Wavenumber Precision	<0.1 $\text{cm}^{-1}$
Modules	Optional measure modules for replacement
Built-in Li-battery life	>8 hrs
Power	AC220V / 50Hz
Modules	plug-and-play
Analysis time	About 5 seconds
System	Windows 10
Software	<ul style="list-style-type: none"> <li>• Infrared control, spectrum processing,</li> <li>• Quantitative analysis of multi-component samples,</li> <li>• Auto inspect software,</li> <li>• Advanced macro programming software</li> <li>• online continuous monitor of optical components, say laser light source, sensor , beam splitter so as to ensure best working status. Auto remove air water and CO<sub>2</sub>.</li> </ul>

## 1. Built-in Modules & Attachments

FT-IR spectrometer is widely applied to IR measure modules of solid transmission, ATR reflectance, and diffuse transmission etc.

- Solid Transmission

- 1 . Many solid powder press
- 2 . Thin film Quantitative analysis
- 3 . Heating press module quantitative analysis
- 4 . Transparent IR materials of various glasses, Jades, crystal materials, and material properties change

- Solid / Liquid Attenuated Total Reflectance (ATR)

1. Many powder sample without press for direct measure

2. Irregular shape sample of non-destructive measure without press
  3. Many polymer, fiber, thin film, and high polymer sample
  4. Many O ring, rubber sample
  5. Many others difficult to measure by transmission
- **Liquid Transmission**
    1. Seal liquid cell qualitative analysis organic solution, VOCs
    2. Disassemble liquid cell available in change optical length for quantitative analysis
    3. Many lubricant oil quantitative analysis
    4. IR window film forming liquid film for qualitative analysis
  - **Gas Cell**
    1. Glass or Stainless steel gas cell can inlet directly with select temperature control and optical length of 1.5cm, 3cm, 5cm, 7cm etc fit to high concentration gas
    2. Multireflectance gas cell of stainless steel, temperature control and optical length of 50cm, 100cm, 5m fit to low concentration gas
    3. Corrosion resistant gas cell can customize anti-corrosion materials gas cell eg HF gas measure

## Advantages To Monitor Gas

- No necessary to adjust cell in front of sample, Nitrogen calibration improves efficiency
- Permanent vertical interferometer module provides excellent shock and temperature resistant ensure reliability
- ZnSe-made beam splitter and mirror seal dehumidifying designed to operate in the field and at site
- Gas cell optical path allow customize by user own base on their specific concentration.
- Built-in temperature control system to keep the constant performance under different conditions
- Optional quality & flow controller for high concentration inlet sample and linearity calibration
- Built-in GTG sensor ( optional MCT ) stand severe environment