

FT-IR Spectrometer

TYPE SP-FTIR-1 / 2



Our Spectrophotometer present a updated technology, which offer our clients High quality system at effect cost

Model SP-FTIR Spectrometer cover a spectral range: $7800\sim 400\text{cm}^{-1}$
Signal-to-noise ratio: 15,000:1,
Resolution: better than 0.85cm^{-1} (for SP-FTIR-1) or better than 0.50cm^{-1} (for SP-FTIR-2)
including: main unit and FTOS operating software



Features:

High Stability:

- Unique cube-corner Michelson interferometer features not only small size and compact structure but also higher stability and less sensitive to vibrations and thermal variations compared with conventional Michelson interferometer.
- Outside IR source design with easy replacement provides higher thermal stability. Stable interference is obtained without the need of dynamic adjustment.
- High intensity IR source adopts a reflex sphere to obtain even and stable IR radiation.

High Accuracy and Reliability:

- The application of programmable gain amplifier, high accuracy A/D converter and embedded computer improves the accuracy and reliability of the whole system.
- Fully sealed damp and dust-proof interferometer, adopting high performance, long lifetime sealing material and desiccator, ensures higher adaptability to the environment and increases accuracy and reliability in operation
- High accuracy gold coated optics with less energy losses realize maximum energy efficiency and increase energy output.

Practical Analytical Software:

- Compatible PC control with user friendly, rich function software enables easy, convenient and flexible operation. Spectrum collect, spectrum conversion, spectrum collect, spectrum conversion, spectrum processing, spectrum analyzing, and spectrum output function etc. can be performed
- The spectrometer connects to PC via a USB port for automatic control and data communication, fully realizing plug-and-play and raising the software flexibility
- An optional external beam allows access to the widest variety of high sensitive peripheral sampling system, such as GC/IR interface and FTIR microscope.
- Various special IR libraries are available for routine search. Users can also add and maintain the libraries or set up new libraries by themselves

Various Accessories:

- The sampling compartment is wide enough for various accessories such as diffused/specular reflection, ATR, Liquid cell, Gas cell, and IR microscope etc.
- PC controls the switch over between internal and external light beams to enable the use of special IR accessories such as external IR microscope and GC/IR interface

Liquid Sample Accessories:

- For liquid and powder sample analysis
- ATR crystal sample holder is easy to operate and change
- ZnSe, Ge and KRS-5 ATR crystals are available for choice

IR Microscope:

- Micro samples analysis, minimum sample size: 100µm (DTGS detector) and 20µm (MCT detector)
- Non-destructive sample analysis
- Translucent sample analysis
- Two measurement methods: transmission and reflection
- Easy sample preparation

Diffuse/Specular Reflectance Accessory:

It is a versatile diffuse reflectance and specular reflectance accessory. Diffuse reflection mode is used for transparent and powder sample analysis. Specular reflection mode is for measuring smooth reflective surface and coating surface.

- High light throughput
- Easy operation, no internal adjustment needed
- Optical aberration compensation
- Small light spot, able to measure micro samples
- Variable angle of incidence
- Fast change of powder cup

Horizontal ATR(Single-reflection and Multi-reflection)/Variable Angle ATR(30° - 60°)

Horizontal ATR is suitable for the analysis of rubber, viscous liquid, large surface sample and pliable solids etc. Variable angle ATR is used for measurement of films, painting (coating) layers and gels etc.

- Easy installation and operation
- High light throughput
- Variable depth of IR penetration

Accessory for Determination of Hydroxyl in IR Quartz

- Fast, convenient and accurate measurement of Hydroxyl content in IR quartz
- Direct measurement to IR quartz tube, no need to cut samples
- Accuracy: $\leq 1 \times 10^{-6}$ (≤ 1 ppm)

Accessory for Oxygen and Carbon in Silicon Crystal Determination

- Special silicon plate holder
- Automatic, fast and accurate measurement of oxygen and carbon in silicon crystal
- Lower detection limit: $1.0 \times 10^{-6} \text{cm}^{-3}$ (at room temperature)
- Silicon plate thickness: 0.1-3.5nm

SiO₂ Powder Dust Monitoring Accessory

- Special SiO₂ powder dust monitoring software
- Fast and accurate measurement of SiO₂ powder dust

Component Testing Accessory

- Fast accurate measurement of the response of such components as MCT, InSb and PbS etc.
- Curve, peak wavelength, stop wavelength and D^* etc can be presented

Fiber Optic testing Accessory

- Easy and accurate measurement of the loss rate of IR optic fiber, overcoming the difficulties for fiber testing , since they are very thin, with very small light-passing holes and uneasy to fix

Jewelry Inspection Accessory

- Accurate identification of jewelleries

SPECIFICATIONS :

Spectral Range:	7800 to 400cm ⁻¹
Resolution:	Better than 0.85cm ⁻¹ (SP-FTIR-1), Better than 0.5cm ⁻¹ (SP-FTIR-2)
Wavenumber Precision:	±0.01cm ⁻¹
Scanning speed:	0.2-2.5 cm ⁻¹ /s, automatically optimized for detector type or manually adjustable for specific applications
Signal to Noise Ratio:	Better than 15000:1 □ RMS value, at 2100cm ⁻¹ - 2000cm ⁻¹ or 2100cm ⁻¹ - 2200cm ⁻¹ , resolution: 4cm ⁻¹ , detector: DTGS, 32times data collection)
Beam Splitter:	Ge coated KBr
Infrared Source:	External, air-cooled, high efficiency Reflex Sphere module
Detector:	DTGS, MCT (optional)
Date System:	Compatible computer
Software:	FT-IR software contains all routines needed for basic spectrometer of operations
IR Library:	11 IR libraries including
Dimensions:	63×52×24cm
Power:	AC:220V/50HZ, 1000VA
Weight:	20kg
Order no.	0.565.010

ORDER INFORMATION'S

0.565.009	SP-FTIR-1	FTIR spectrometer range 7800~400cm ⁻¹ , Resolution: better than 0.85cm ⁻¹
0.565.010	SP-FTIR-2	FTIR spectrometer range 7800~400cm ⁻¹ , Resolution: better than 0.50cm ⁻¹

OPTIONS

0:565:015	Diffuse/Specular Reflectance	set	1
0:565:016	Horizontal ATR (ZnSe or KRS-5 crystal)	set	1
0:565:017	Liquid ATR (ZnSe crystal)	set	1
0:565:018	Diamond ATR (single reflection)	set	1
0:565:019	Gas cell	pcs	1
0:565:020	Liquid cell	pcs	1
0:565:021	KBr hydraulic press 15T (including die set)	set	1
0:565:022	Spare die set the hydraulic press	set	1
0:565:023	Mortar and pestle \varnothing 50	set	1
0:565:024	Mortar and pestle \varnothing 70	set	1
0:565:025	IR Microscope	set	1
0:565:026	Dehumidifier (15L)	set	1
0:565:027	Dehumidifier (22L)	set	1
0:565:028	KBr Window plate (Φ 30 \times 5)	pcs	1
0:565:029	CaF ₂ Window plate (Φ 30 \times 5)	pcs	1
0:565:030	BaF ₂ Window plate (Φ 30 \times 5)	pcs	1
0:565:031	KBr powder spectroscopic grade (10g/bottle)	bottle	1
0:565:032	KBr powder spectroscopic grade (25g/bottle)	bottle	1
0:565:033	KBr power analytical grade (100g/bottle)	bottle	1
0:565:034	Oxygen and Carbon in Silicon Crystal determination package	set	1
0:565:035	SiO ₂ Powder Dust Monitoring package	set	1
0:565:036	Hydroxyl in IR Quartz determination package	set	1
0:565:037	IR detector response testing system	set	1

DATA BASE

0:565:038	FDB-1701 Polymer library	pkg	1
0:565:039	FDB-1702 Polymer Chemical library	pkg	1
0:565:040	FDB-1703 Art Media library	pkg	1
0:565:041	FDB-1704 Fiber library	pkg	1
0:565:042	FDB-2701 Organic Reagent library	pkg	1
0:565:043	FDB-2702 Organic Reagent solid library	pkg	1
0:565:044	FDB-2703 Inorganic Reagent library	pkg	1
0:565:045	FDB-2705 Surfactant library	pkg	1
0:565:046	FDB-4701 Minerals library	pkg	1
0:565:047	FDB-5701 Georgia State Crime Laboratory drug library	pkg	1
0:565:048	FDB-5702 Vapour Phase library	pkg	1