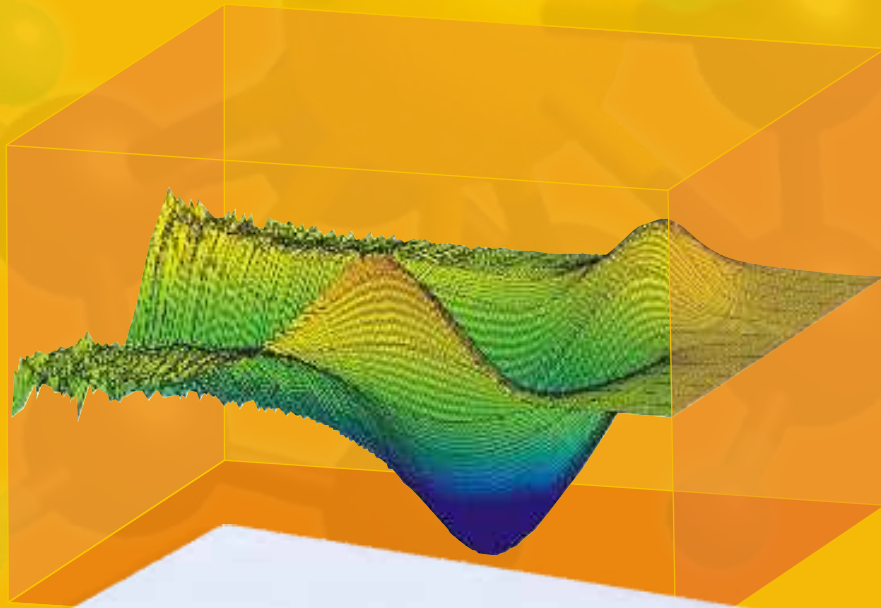


# FTIR *Spectrometer*



LFIS Series is used for the identification and quantification of traces of organic analysis. Its powerful software increases the ease of use of the FTIR Spectrometer. The standard infrared spectrum is calculated from the Fourier-transformed interferogram, giving a spectrum in percent transmittance (%T) vs. light frequency ( $\text{cm}^{-1}$ ). LFIS Series relies on the fact that most of the molecules absorb light in the infra-red region of the electromagnetic spectrum; this absorption corresponds specifically to the bonds present in the molecule. Optimal interferometer alignment is maintained automatically for continuous optimization and exceptional reproducibility.

**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 desiccators, 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:  $\leq 1 \times 10^{-6}$  ( $\leq 1$ 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.

### SiO<sub>2</sub> Powder Dust Monitoring Accessory:

- ★ Special SiO<sub>2</sub> powder dust monitoring software.

### Specification:

| Model No.                                | LFIS-510  | LFIS-520        |
|--|---|-----------------|
| Spectral Range (cm <sup>-1</sup> )       | 7800 to 400   |                 |
| Resolution (cm <sup>-1</sup> )           | Better than 0.85  | Better than 0.5 |
| Wavenumber Precision (cm <sup>-1</sup> ) | ±0.01   |                 |
| Scanning speed (cm <sup>-1</sup> /s)     | 0.2-2.5, automatically optimized for detector type or manually adjustable for specific applications   |                 |
| Signal to Noise Ratio                    | Better than 15000:1 (RMS value, at 2100cm <sup>-1</sup> - 2000cm <sup>-1</sup> or 2100cm <sup>-1</sup> - 200cm <sup>-1</sup> , resolution: 4cm <sup>-1</sup> , 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 (cm)                          | 63 x 52 x 24  |                 |
| Power                                    | AC:220V/50HZ, 1000VA  |                 |
| Weight (kg)                              | 20  |                 |
| Catalog No.                              | 33260101  | 33260102        |

**Accessories**

| Items                                       | Catalog No. |
|---|-------------|
| Diffuse/Specular Reflectance                | 33260111    |
| Horizontal ATR                              | 33260112    |
| Variable angle ATR                          | 33260113    |
| Gas cell                                    | 33260114    |
| Liquid cell                                 | 33260115    |
| KBr hydraulic press 15T (including die set) | 33260116    |
| Spare die set the hydraulic press           | 33260117    |
| Mortar and pestle 50                        | 33260118    |
| Mortar and pestle 70                        | 33260119    |
| KBr Window plate 30×5                       | 33260121    |
| CaF2 Window plate 30×5                      | 33260122    |
| BaF2 Window plate 30×5                      | 33260123    |
| KBr powder spectroscopic grade (10g/bottle) | 33260124    |
| KBr powder spectroscopic grade (25g/bottle) | 33260125    |
| KBr power analytical grade (100g/bottle)    | 33260126    |

**Labnics Equipment**

43040 Christy St., Fremont, CA 94538 USA,

Toll Free : (877) 620 9992

Tel. : (925) 271 4322

Fax : (925) 886 0400

Email : [info@labnics.com](mailto:info@labnics.com) Website : [www.labnics.com](http://www.labnics.com)