

## WQF-510/520 FT-IR Spectrometer



### Features:

#### 1 High Stability:

1.1 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.

1.2 Outside IR source design with easy replacement provides higher thermal stability. Stable interference is obtained without the need of dynamic adjustment.

1.3 High intensity IR source adopts a reflex sphere to obtain even and stable IR radiation.

#### 2 High Accuracy and Reliability:

2.1 The application of programmable gain amplifier, high accuracy A/D converter and embedded computer improves the accuracy and reliability of the whole system.

2.2 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

2.3 High accuracy gold coated optics with less energy losses realize maximum energy efficiency and increase energy output.

#### 3 Practical Analytical Software:

3.1 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

3.2 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

3.3 An optional external beam allows access to the widest variety of high sensitive peripheral sampling system, such as GC/IR interface and FTIR microscope.

3.4 Various special IR libraries are available for routine search. Users can also add and maintain the libraries or set up new libraries by themselves

#### 4 Various Accessories:

4.1 The sampling compartment is wide enough for various accessories such as diffused/specular reflection, ATR, Liquid cell, Gas cell, and IR microscope etc.

4.2 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

#### 5 Liquid Sample Accessories:

5.1 For liquid and powder sample analysis

5.2 ATR crystal sample holder is easy to operate and change

5.3 ZnSe, Ge and KRS-5 ATR crystals are available for choice

#### 6 IR Microscope:

6.1 Micro samples analysis, minimum sample size: 100 $\mu$ m (DTGS detector) and 20 $\mu$ m (MCT detector)

6.2 Non-destructive sample analysis

6.3 Translucent sample analysis

6.4 Two measurement methods: transmission and reflection

6.5 Easy sample preparation

#### 7 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.

7.1 High light throughput

7.2 Easy operation, no internal adjustment needed

7.3 Optical aberration compensation

7.4 Small light spot, able to measure micro samples

7.5 Variable angle of incidence

7.6 Fast change of powder cup

## 8 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.

8.1 Easy installation and operation

8.2 High light throughput

8.3 Variable depth of IR penetration

## 9 Accessory for Determination of Hydroxyl in IR Quartz

9.1 Fast, convenient and accurate measurement of Hydroxyl content in IR quartz

9.2 Direct measurement to IR quartz tube, no need to cut samples

9.3 Accuracy:  $\leq 1 \times 10^{-6}$  ( $\leq 1$ ppm)

## 10 Accessory for Oxygen and Carbon in Silicon Crystal Determination

10.1 Special silicon plate holder

10.2 Automatic, fast and accurate measurement of oxygen and carbon in silicon crystal

10.3 Lower detection limit:  $1.0 \times 10^{-6} \text{cm}^{-3}$  (at room temperature)

10.4 Silicon plate thickness: 0.1-3.5mm

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

11.1 Special SiO<sub>2</sub> powder dust monitoring software

11.2 Fast and accurate measurement of SiO<sub>2</sub> powder dust

## 12 Component Testing Accessory

12.1 Fast accurate measurement of the response of such components as MCT, InSb and PbS etc.

12.2 Curve, peak wavelength, stop wavelength and  $D^*$  etc can be presented

### 13 Optic Fiber testing Accessory

13.1 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

### 14 Jewelry Inspection Accessory

14.1 Accurate identification of jewelries

### Specifications

Spectral Range:	7800 to 400cm <sup>-1</sup>
Resolution:	Better than 0.85cm <sup>-1</sup> (WQF510), Better than 0.5cm <sup>-1</sup> (WQF520)
Wavenumber Precision:	±0.01cm <sup>-1</sup>
Scanning speed:	0.2-2.5 cm <sup>-1</sup> /s, 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> - 2200cm <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)
Data 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