

Edible Oil Raman Detection System

NY6000

Features

- Versatile All-in-One Device: Capable of performing both quantitative and qualitative detection of safety and quality indicators in edible oils.
- Safe and Environmentally Friendly: Eliminates the need for complex chemical analysis, preventing operators from exposure to highly corrosive, highly toxic, flammable, and explosive hazardous chemicals, thereby enhancing safety.
- High Sensitivity: Utilizes a high-sensitivity cooled CCD, enabling the detection of low-level adulteration in edible oils.
- Strong Applicability: The instrument's design balances size and performance, meeting the detection requirements for various indicators in edible oils such as tea oil, soybean oil, and olive oil.
- One-Click Analysis: Equipped with powerful and user-friendly spectral analysis software.

Applications

- Edible Oil Adulteration Detection
- Edible Oil Origin Identification
- Edible Oil Grade Authentication
- Edible Oil Storage Quality Assessment
- Edible Oil Safety Evaluation

Description

NY6000 is a comprehensive edible oil quality detection system based on Raman spectroscopy technology. It truly integrates multiple functions, enabling accurate and efficient detection of various indicators in edible oils. It can quantitatively measure indicators such as oleic acid and also perform identification of adulteration and origin in high-end edible oils.

Equipped with multifunctional analysis and detection software, NY6000 allows for rapid analysis of edible oil safety and quality indicators. It supports users in quickly obtaining essential oil quality information, helping them make informed decisions with ease and enhancing the overall quality of edible oil products.

NY6000 is a technological and application innovation by Aopu Tiancheng, stemming from the research and application of Raman spectroscopy-based edible oil detection technology. It represents a comprehensive expansion of Raman technology into the field of grain and oil detection.



NY6000 Edible Oil Raman Comprehensive Detection System

1. Parameter

NY6000 Technical Specifications	
Applications	1. Edible Oil Adulteration Detection: Detects adulteration in edible oils, particularly high-end oils such as olive oil and tea seed oil. Can be used for anti-counterfeiting and identification of gutter oil. 2. Edible Oil Origin Identification: Primarily identifies the origin of edible oils such as rapeseed oil, supporting regional branding and authenticity verification. 3. Edible Oil Grade Authentication: Conducts grade authentication for edible oils such as rapeseed oil by detecting components like high oleic acid.
Measured Parameters	1) Quality Analysis: Oleic acid, erucic acid, fatty acid composition. 2) Purity Analysis 3) Origin Identification
Detection Error	1) Component (oleic acid) analysis: $\pm 10\%$ 2) Purity (adulteration) analysis: $\pm 5\%$
Types of Edible Oils Tested	Soybean oil, tea seed oil, rapeseed oil, corn oil, and other edible oils
Excitation Wavelength	1064 nm
Spectral Range	200–2600 cm^{-1} (with 1064 nm excitation). Customizable wavenumber range is supported.
Detector	Ultra-high sensitivity cooled (-15°C) back-illuminated 2048×64 area array detector
Maximum Laser Power	450 mW
Spectral Stability	$\sigma/\mu < 0.5\%$ (continuous operation for 8 hours)
Temperature Stability	Spectral peak shift $\leq 1 \text{ cm}^{-1}$ (operating temperature range: 10–40 $^{\circ}\text{C}$)
Signal-to-Noise Ratio	> 3000:1
Laser Diameter	Outer diameter: 12.7 mm, aperture: 8.5 mm
Interfaces	USB 2.0, Ethernet port
Power Supply	DC 5V, 3.5A
Weight	< 10 kg

2. Packing List

Optional Accessories	
1	Cuvette
2	Modeling Software

3. Effect Diagram

