

Portable Food Safety Detector

ATFD200

Features

- One-click data upload and remote software upgrades.
- QR code scanning for history download and gold card recognition.
- Bluetooth printing of certificates.
- 24 channels with 6 wavelengths each.
- Automatic detection and CT graph display.
- 10-inch touchscreen, Android 10.0, Bluetooth, WiFi.
- Modules: pesticide residue, spectrometry, colloidal gold.
- Keyboard/handwriting input switchable.
- 37°C constant incubation with adjustable display.
- Simple/detailed receipt printing.
- Portable with built-in lithium battery.
- Supports national traceability platforms.

Description

The Portable Food Safety Detector by Optosky is a high-performance device that complies with national food testing standards and integrates rapid detection technologies. Combining chemical coloration, colloidal gold, fluorescence, and advanced microelectronics, it can quickly detect over 500 parameters, including pesticide residues, additives, heavy metals, and toxins.

Ideal for food production, agriculture, and public health, this detector ensures efficient, accurate testing for quality control and safety compliance. Its portability and versatility make it a vital tool for addressing modern food safety challenges.

Application

- Agricultural Products and Food: Fruits, vegetables, aquatic products, rehydrated products, dried fruit products.
- Dairy and Meat Products: Milk, meat products.
- Edible Oils and Condiments: Edible oil, vinegar, soy sauce.
- Grain and Grain Products: Flour.
- Other Foods: Chili, alcoholic beverages, honey, candied fruits, preserved fruits, etc.
- Pesticide Residues: Organophosphates, Carbamates
- Illegal Additives and Drug Residues: Clenbuterol hydrochloride, Salbutamol, Ractopamine, Sulfonamides, Chloramphenicol, Malachite green, Melamine
- Toxic and Harmful Substances: Aflatoxins, Opium poppy shells, Formaldehyde, Brightening agents
- Conventional Components and Additives: Proteins, Borax, Benzoyl peroxide, Nitrites, Sulfur dioxide, Volatile basic nitrogen
- Other Chemical Indicators: Methanol, Hydrogen peroxide, Acid value of edible oil, Peroxide value of edible oil, Potassium bromate, Sodium benzoate, Monosodium glutamate (MSG), Sodium saccharin

In total, it can test nearly 500 items, covering all major areas of food safety.



1. Parameter

Parameter	Description
Integrated Modules	- Pesticide Residue Module (6 tests) - Multifunctional Spectrometry Module (150 tests) - Colloidal Gold Module (160 tests)
Detection Channels	- Pesticide Residue: 24 channels - Spectrometry: 24 channels - Colloidal Gold: 1 channel - Optional Pesticide Rapid Test Card: 16 channels
Display and OS	10-inch touchscreen, Android 8.0.
Input Methods	Embedded keyboard for multiple input methods.
Wavelengths	Each channel in Pesticide Residue and Spectrometry Modules includes 6 wavelengths: 410nm, 460nm, 520nm, 550nm, 590nm, 630nm.
Temperature Control	Adjustable heating (25–60°C), precision: $\pm 1^{\circ}\text{C}$.
Standard Compliance	Supports GB/T 5009.199-2003, NY/T 448-2001, and KJ201710 standards.
Built-in Categories	Includes 17 categories of agricultural products (240 common fruits and vegetables).
Automatic Detection	Auto-recognition of cuvettes upon placement for testing.
Stability and Accuracy	- Photocurrent Stability (410nm): $\leq 0.5\%/3\text{min}$ - Transmittance Error (410nm): $\pm 0.5\%$ - Stability: $\leq 0.002\text{A}$ - Passage Error: $\leq 0.020\text{A}$ - Repeatability: $\leq 0.001\text{A}$
Sensitivity	- Wavelength Error (410nm, 520nm): $\pm 5\text{nm}$ - Stability (590nm): $\leq 0.01/10\text{min}$ - Passage Difference (520nm): ≤ 0.05
Colloidal Gold Module Features	- Supports chromaticity (color) detection, CT ratio, and T-line fitting methods. - Auto CT line recognition, correction range: $\leq \pm 3\text{mm}$. - Real-time card recording during tests. - Displays CT line photo, grayscale peak curve, C and T values (to 2 decimal places). - Threshold modification for compatibility with various cards.
Card Calibration	Real-time video calibration for card CT line position adjustment via touch controls.
Printing Options	- Built-in thermal printer with simple (list results) and detailed (detailed data) modes.
Connectivity and Export	- Bluetooth connection to certificate printer. - Export history as Excel files, downloadable via QR code.
Data Analysis and Updates	- Statistical charts: line graphs, pie charts, 3D pie charts, bar graphs. - Remote updates.

Reagent Sensitivity	- Acephate: $\leq 0.05\text{mg/kg}$ - Triazophos: $\leq 0.05\text{mg/kg}$ - Fenitrothion: $\leq 0.05\text{mg/kg}$ - Chlorpyrifos: $\leq 0.05\text{mg/kg}$ - Abamectin: $\leq 0.1\text{mg/kg}$ - Acetamiprid: $\leq 0.2\text{mg/kg}$
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2. Packing List

Item	Item name	Specifications	Unit	Quantity	Remark
Main chassis	Instrument host (explosion-proof box)	See tags	Table	1	
Accessory	Aluminum alloy box		piece	1	
	Instrument power adapter	12V 3A	piece	1	
	Instrument instruction manual		book	1	
	Certificate of conformity/warranty card		piece	1	
	Electronic balance	0-500g	table	1	
	Sample cup	50ml	piece	24	
	Triangular flask	50ml	piece	5	
	Graduated test tube	20ml	piece	5	
	Colourimetric bottle	10ml	piece	20	
	Colourimetric dish	10mm	box	2	10 pcs/box
	Pipette	1-5ml	handle	1	
		100ul-1000ul	handle	1	
	Pipette nozzle	1-5ml	piece	20	
		100ul-1000ul	piece	96	
	Funnel	$\phi 40$	piece	5	
	Scissors		handle	1	
	Tweezers		handle	1	
	Utility knife		handle	1	
	Quick qualitative filter paper		box	1	
	Plastic bottle	500ml	piece	1	
	Plastic beaker	250ml	piece	1	