

AST-YP-GT7 Advanced Intelligent Soil Nutrient Analysis System



A well-known brand at home and abroad, worthy of trust!

We sincerely invite distributors from all over the country to cooperate on projects. The company fully implements regional management and price protection!

Industry leader, numerous real user cases

High-precision full project, multiple intellectual property rights, certified by national-level institutions.

(This model is a new-generation multifunctional soil tester, a product for bidding by various research institutes, universities, and vocational colleges)

1. Introduction to the Multi-Parameter Soil Environment Analysis and Testing System:

Comprehensive Support: This instrument integrates reagents, equipment, and instrumentation into one unit, making it convenient to carry—essentially a small mobile laboratory. Users do not need to provide additional accessories, and it can also be flexibly used for field testing. It is suitable for use by agricultural service departments, agricultural input distributors, higher education institutions, research institutes, cooperatives, fertilizer manufacturers, and large-scale farmers for soil testing, fertilizer application recommendations, verifying the authenticity of fertilizers, and environmental testing.

Comprehensive Detection Functions: The testing items cover both domestic and international standards. In addition to the standard reagents, other types of reagents can be purchased as optional additions.

Easy Operation and Fast: Comes with a full set of accessories and ready-to-use reagents, requiring no additional preparation.

Reliable Performance: The working stability is six times better than the national standard JJG179-90, and the repeatability reaches the level of grating-type spectrophotometers.

2. Many functions and complete test items:

1. Soil nutrients: ● Soil ammonium nitrogen, soil available phosphorus, soil available potassium, soil nitrate nitrogen, soil hydrolyzed nitrogen, soil total nitrogen, soil total phosphorus, soil total potassium, soil organic matter (hill method), soil organic matter (leaching method), soil total organic carbon, soil carbon-to-nitrogen ratio, PH value, salt content, moisture.

● Trace elements in soil: soil calcium, soil magnesium, soil sulfur, soil silicon, soil boron, soil iron, soil copper, soil manganese, soil zinc, soil chlorine, soil molybdenum;

● Soil heavy metals: soil lead, soil arsenic, soil cadmium, soil chromium, soil mercury, soil nickel, soil aluminum, soil fluorine, soil titanium, soil selenium.

2. Environmental elements: ● Soil volume moisture content, soil temperature, soil conductivity, air temperature, air humidity, dew point, atmospheric pressure, illumination, carbon dioxide.

3. Fertilizer nutrients: ● Elemental fertilizer: ammonium nitrogen in nitrogen fertilizer, nitrate nitrogen in fertilizer, urea nitrogen, diurea, phosphorus in phosphorus fertilizer, water-soluble phosphorus in phosphorus fertilizer, potassium in potassium fertilizer;

- Compound fertilizer total nitrogen, compound fertilizer total phosphorus, compound fertilizer total potassium;
 - Total nitrogen of organic fertilizer, total phosphorus of organic fertilizer, total potassium of organic fertilizer, nitrate nitrogen of organic fertilizer, available phosphorus of organic fertilizer, available potassium of organic fertilizer, acid hydrolysis of organic fertilizer, organic matter;
 - Water-soluble humic acid (weathered coal), water-soluble humic acid (lignite), water-soluble humic acid (peat), free humic acid (weathered coal), free humic acid (lignite), free humic acid (peat);
 - Water-soluble fertilizer total nitrogen, water-soluble fertilizer total phosphorus, water-soluble fertilizer total potassium;
 - Foliar fertilizer total nitrogen, foliar fertilizer total phosphorus, foliar fertilizer total potassium;
 - Trace elements of various fertilizers: calcium, magnesium, sulfur, silicon, boron, iron, copper, manganese, zinc, chlorine, molybdenum;
 - Fertilizer heavy metals: fertilizer lead, fertilizer arsenic, fertilizer cadmium, fertilizer chromium, fertilizer mercury, fertilizer nickel, fertilizer aluminum, fertilizer fluorine, fertilizer titanium, fertilizer selenium.
4. Fresh crop nutrition: ● Crop nitrate nitrogen, crop ammonium nitrogen, crop phosphorus, crop potassium;
- Trace elements in crops: crop calcium, crop magnesium, crop sulfur, crop silicon, crop boron, crop iron, crop copper,

crop manganese, crop zinc, crop chlorine, crop molybdenum;

- Nitrates and nitrites in crops.

5. Dry plant nutrition: ● Plant total nitrogen, plant total phosphorus, plant total potassium

6. Tobacco nutrition: ● 20 items such as total nitrogen, total phosphorus, total potassium, reducing sugar, water-soluble total sugar, boron, manganese, iron, copper, calcium, magnesium, etc.

7. Food (fruits, vegetables, etc.): ● Nitrate, nitrite, heavy metals (lead, chromium, cadmium, arsenic, mercury) and other items.

8. In water quality: ● ammonium nitrogen, phosphorus in water, potassium in water, nitrate, nitrite, hardness, PH, iron, copper, manganese, zinc, boron, chlorine, sulfur, silicon, molybdenum, etc

3. Testing Efficiency:

Multiple nutrients such as available nitrogen (N), phosphorus (P), and potassium (K) in soil can be extracted and measured simultaneously in one step (drafted according to the Ministry of Agriculture's rapid testing industry standards).

Nutrients such as nitrogen (N), phosphorus (P), and potassium (K) in fertilizers can be tested simultaneously, quickly,

and accurately.

Testing speed under normal skilled operation conditions:

- Testing one soil sample for N, P, and K requires 20 minutes (including reagent preparation and soil sample

pre-treatment); testing three soil samples simultaneously for N, P, and K takes ≤ 40 minutes; testing eight soil samples takes ≤ 1 hour.

- Testing one fertilizer sample for N, P, and K takes ≤ 50 minutes; testing three fertilizer samples simultaneously for N, P, and K takes ≤ 1.5 hours.

4. Testing Accuracy:

- Soil nitrogen, phosphorus, and potassium error $\leq 1\%$; organic matter error $\leq 2\%$; relative error of trace elements $\leq 5\%$.

- For fertilizers, individual nutrient error $\leq 0.5\%$, and the combined error of nitrogen, phosphorus, and potassium $\leq 1\%$.

- Relative error of heavy metals $\leq 5\%$.

V. Features:

1. Android smart operating system, main control chip uses ARM Cortex-A7, RK3288/quad-core processor, with a main frequency of 1.88GHz for faster operation and greater stability.

2. ★ Adopts a precision rotary colorimetric pool design (Patent No.: ZL201821777724.7), ensuring more accurate

light source consistency and reliable detection accuracy.

3. ★12 rotating detection channels, capable of rapidly detecting 12 samples at once, greatly improving detection efficiency and reducing costs.

4. Uses high-precision filter technology and proprietary analysis methods (Patent No.: ZL202021763837.9), with authoritative certification.

5. Built-in calibration function during detection, intelligent constant-current voltage regulation, automatic light intensity calibration, ensuring accurate detection, certified by the National Institute of Metrology of China with a "Calibration Certificate".

6. ★Built-in sensor aviation interface, easy to plug and unplug, equipped with FDR sensor and multi-factor environmental sensor.

7. ★FDR sensor is an integrated three-parameter soil sensor, capable of simultaneously measuring soil moisture content, soil environmental temperature, and soil electrical conductivity (salinity), convenient and quick.

8. ★The multi-factor environmental sensor is a 6-in-1 sensor, capable of simultaneously measuring air temperature, air humidity, dew point, atmospheric pressure, illuminance, and carbon dioxide.

9. The instrument comes standard with Wi-Fi wireless upload, 4G network transmission, and GPRS wireless remote

transmission functions for fast data upload.

10. Equipped with an intelligent cloud agriculture platform; after connecting to a wireless network, the instrument can selectively or batch upload detection data wirelessly, facilitating long-term data management and visualization analysis for users.

11. The instrument is equipped with USB and Ethernet interfaces, built-in large-capacity memory, and data can be copied at any time using a USB drive.

12. Users can check historical data anytime online via the cloud platform using their mobile phones.

13. Built-in crop expert fertilization system, capable of calculating recommended fertilizer quantities for over a hundred kinds of national agricultural economic crops, fruit trees, etc., based on target yields, providing scientifically guided fertilization plans for agricultural production. Soil testing and formula fertilization results can be printed, including: crop type, fertilizer type, target yield, total demand, and recommended fertilization plan.

14. Built-in plant nutrition diagnostic standard atlas, allowing leaf comparison based on images of nutrient deficiencies in various crops to diagnose excesses or deficiencies.

15. Four-wavelength professional cold light source (red, blue, green, orange), with stable wavelengths, no thermal drift during long continuous operation, lifespan up to 100,000 hours, high reproducibility, and high accuracy.

16. The colorimeter cell uses a standard 1 cm cuvette, with no mechanical displacement or wear. The optical path testing is accurately positioned, effectively shielding external light interference, ensuring detection results surpass national standards.
17. The instrument system includes sample pre-treatment operation videos. Detection methods for various samples can be observed by clicking on the video module, so operators do not need to study manuals. This facilitates convenient and fast guidance, allowing beginners to operate quickly.
18. Built-in next-generation high-speed thermal printer (no ribbon required), printing information including: testing unit, testing personnel, testing items, channel number, absorbance, nutrient content (mg/kg), testing time, and QR code, among others.
19. High-sensitivity 7-inch true-color touchscreen, providing more efficient and user-friendly operation with high-definition and interactive display, minimizing cumbersome operations and errors of traditional instruments, and covered by multiple software copyrights.
20. Built-in clock function for convenient operation time recording and long-term historical tracking.
21. Supports multiple account login with password protection, featuring an efficient UI interface. Different users can add or edit testing information freely, and saved data can be used long-term.

22. GPS function: can record latitude and longitude locations during fieldwork to meet special user needs.
 23. Built-in low voltage warning function to clearly indicate battery level during testing to avoid data deviation, and equipped with power-off protection function that automatically saves data upon shutdown to prevent data loss.
 24. Dual AC/DC power supply, built-in high-capacity rechargeable lithium battery, capable of more than 10 hours of continuous work on full charge, with optional car power supply connection.
 25. The instrument supports Chinese and English switching to meet export requirements.
 26. High-strength PVC engineering plastic carrying case design, sturdy and durable, convenient for transport.
6. Technical parameters:
1. Power supply: AC 220±22V DC 12V 5V (the built-in lithium battery of the instrument can also be used for on-board power supply)
 2. Power: ≤5W
 3. Range and resolution: 0.001-9999
 4. Repeatability error: ≤0.02% (0.0002, potassium dichromate solution)
 5. Instrument stability: no drift in the display number within one hour (transmittance measurement); The digital drift did not exceed 0.3% (0.003, transmittance measurement) and 0.001 (absorbance measurement) within two hours.

6. Linear error: $\leq 0.1\%$ (0.001, copper sulfate detection)
7. Sensitivity: red light $\geq 4.5 \times 10^{-5}$ blue light $\geq 3.17 \times 10^{-3}$ green light $\geq 2.35 \times 10^{-3}$ orange light $\geq 2.13 \times 10^{-3}$
8. Wavelength range: red light: $680 \pm 2\text{nm}$; Blu-ray: $420 \pm 2\text{nm}$; Green light: $510 \pm 2\text{nm}$; Orange light: $590 \pm 4\text{nm}$
9. PH value (pH) :(1) Test range: 1~14 (2) Accuracy: 0.01 (3) Error: ± 0.1
10. Salt content: (1) Test range: 0.01%~1.00% (2) Relative error: $\pm 5\%$
11. Soil moisture technical parameters Moisture unit: % (g/100g); Moisture content test range: 0-100%; Error less than 0.5%
12. Soil temperature: range: $-40-120^\circ\text{C}$; Measurement accuracy: $\pm 0.2^\circ\text{C}$; Resolution: $\pm 0.1^\circ\text{C}$
13. Soil conductance: range: 0-20ms; Measurement accuracy: $\pm 2\%$; Resolution: $\pm 0.1\text{ms}$
14. Temperature range: $-40^\circ\text{C} \sim 125^\circ\text{C}$; Accuracy: $\pm 0.3^\circ\text{C}$
15. Humidity range: 0%HR-100%HR; Accuracy: $\pm 3\%\text{HR}$
16. Dew point range: $-20 \sim 50^\circ\text{C}$; Accuracy: $\pm 0.5^\circ\text{C}$
17. Air pressure range: 300~110kPa (altitude 9000 meters~-500 meters); Accuracy: 0.06hPa (0.5m)
18. Light measurement range: 0-200,000 Lux; Accuracy: 0.054 Lux
19. CO2 measurement range: 0-5000 PPM; Accuracy: 50 PPM

20. Shockproof rating: IP65

21. Instrument dimensions: 48×34.5×22 cm

22. Net weight of main unit: 5.2 kg

23. Packaging dimensions: 510×390×375 mm

24. Packaging weight: 11.5 kg

Seven, After-sales service:

The instrument comes with a five-year warranty, lifetime free repair service, free shipping of the instrument, and free training.

Lifetime free technical support for agriculture-related areas such as soil and fertilizer!

(See the next page for the configuration list)

8. Configuration List:

Instrument Box			Medicine Box		
No.	Name	Quantity	No.	Name	Quantity
1	Instrument	1 unit	1	Medicine Box	11 unit
2	pH meter	1 piece	2	Nitrogen, Phosphorus, Potassium, Organic Matter Reagents	1set
3	TDS Meter	1 stick	3	Qualitative Filter Paper	1box
4	Electronic scale (100g/0.01g)	1 set	4	Colorimetric Cuvettes	10units
5	Aluminum box	1 piece	5	Glass Test Tubes	12 pieces
6	Ear washing bulb	1 piece	6	Plastic Test Tubes	20sticks

7	Glass stirring rod	1 stick	7	Erlenmeyer Flask 100ml	2units
8	Glass pipette 1ml	1 stick	8	Reagent Bottles	1unit
9	Glass pipette 2ml	1 stick	9	Measuring Cylinder 50ml	1unit
10	Glass pipette 5ml	1 stick	10	Plastic Droppers	12sticks
11	Glass pipette 10ml	1 stick	11	Test Tube Rack	1 pair
12	Printer paper	1 roll	12	Test Tube Brush	1unit
13	Instruction Manual	1 book	13	Wash Bottle	1unit
14	Certificate of Conformity/Warranty Card	1 copy	14	Measuring Spoon	1set
			15	Power Adapter	1unit



济南安生泰医疗科技医疗有限公司
Jinan Ansenta Medical Technology Co., Ltd.



Email: info@ansenta.com



www.ansenta.com