

Handheld Hyperspectral Water Quality Analyzer

ATE3100

Features

- Test parameters: Turbidity, Chemical Oxygen Demand (COD), Ammonia Nitrogen, Total Phosphorus, Total Nitrogen, Permanganate Index, Biochemical Oxygen Demand (BOD), Suspended Solids, Total Suspended Solids, etc.
- Ultra-lightweight and compact design, easy to carry.
- Built-in screen with Chinese operating system for user-friendly operation, requiring no special training to operate the instrument.
- Integrated GPS automatically records sampling point locations.
- Wavelength range: 185–1000 nm
- Spectral resolution: 3 nm
- Accuracy deviation: <20%
- Built-in lithium battery with standby time >6 hours
- Weight: <650 g (including battery)
- Waterproof rating: IP65
- Data transmission via Bluetooth; data can be directly uploaded to the monitoring cloud platform via an app.

Applications

- Surface Water Quality Monitoring
- Lake and Marine Water Quality Monitoring
- Wastewater Quality Monitoring
- Environmental Damage Assessment
- Meteorology, Flux Stations

Description

The ATE3100 Handheld Hyperspectral Water Quality Analyzer is an independently developed portable water quality monitoring system by Optosky. It provides measurements for multiple water quality parameters, including turbidity, Chemical Oxygen Demand (COD), ammonia nitrogen, Total Phosphorus (TP), Total Nitrogen (TN), permanganate index, Biochemical Oxygen Demand (BOD), and Total Suspended Solids (TSS). The detection process requires no chemical reagents, and results are displayed in real-time. It features significant advantages such as compact size, portability, speed, accuracy, all-weather operation, and low power consumption, meeting the needs for rapid monitoring in scenarios like surface water and wastewater.

Monitoring data from the ATE3100 can be uploaded to a cloud platform, enabling real-time multi-point information collection, the generation of water quality distribution maps, and historical data review and overall trend analysis for specific regions. (To be developed later by the Cloud Network R&D Department.) Furthermore, Optosky has collaborated with industry peers to establish the industry standard "Technical Guideline for Spectral Water Quality Online Monitoring Systems."



1. Selection Guide

Optical Parameters	
Light Source	Xenon lamp, with a theoretical lifespan of over 10 years.
Power Consumption	2W
Spectral Range	200-1100nm
Spectral Resolution	Better than 5nm
Integration Time	Greater than 1ms (adjustable)
Effective Pixels	2048
Analysis Parameters	
Detection Principle	Transmission-Type Full Spectrum Method
Measurement Parameters	COD, Turbidity, TSS, Total Phosphorus, Total Nitrogen, Ammonia Nitrogen, etc.
Measurement Range	COD:0~200mg/L ; $\leq 5\%F.S$
	Turbidity: 0~100 NTU; Error $\leq 5\% F.S.$
	TSS:0~100mg/L ; $\leq 5\%F.S$
	Total Nitrogen: 0~10 mg/L; Error $\leq 20\% F.S.$
	Total Phosphorus: 0~10 mg/L; (Subject to actual requirements)
	Ammonia Nitrogen: 0~10 mg/L; Error $\leq 20\% F.S.$
	CODmn:0~80mg/L ; $\leq 5\%F.S$
	BOD: 0~100 mg/L; (Subject to actual requirements)
Routine Parameters	
Screen Size	4-inch Capacitive Touch Screen
Communication Methods	4G and Bluetooth
Sensor	Built-in GPS System
Camera	On-site Video Recording for Evidence Collection
Power Supply Method	Rechargeable Lithium-ion Battery
TYPE-C	Charging and Data Transfer Function
Button	Power Button
Product Dimensions	TBD
Ingress Protection Rating	IP54
Equipment Weight	TBD
Operating Time	$\geq 6h$
Operating Temperature	-10°C - +40°C
APP System Support	Android 9.0 and above
Accessories List	Main Unit $\times 1$, Android APP (Water Quality Special Edition), Water Sample Bucket $\times 1$, Packaging Box $\times 1$, Charging Kit $\times 1$
APP Software Features	1.Spectral Data Acquisition and Processing Function 2.Historical Detection Data Viewing and Export Function 3.Test Scenario Modeling and Environmental Information Recording Function 4.System Account Management Function

2. Effect Diagram

