

# Palintest

## Turbidity Expert

### Specifications



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## 1. General Specifications:

- **Product Name:** Turbidity Expert
- **Application:** Portable instrument designed for field and/or lab use to measure water clarity or cloudiness and detect suspended particles in water.
- **Display:** Full colour Touch Screen IPS display 800 x 480px that offers superior visibility, wide viewing angles, providing comfortable user experience.

## 2. Measurement Range & Performance:

- **Measurement technology:** Primary nephelometric scatter detection (90°)
- **Turbidity Range:** 0 to 1000 NTU (Nephelometric Turbidity Units)
- **Resolution:** Measures turbidity as low as 0.01 NTU (0 to 9.99 NTU), 0.1 NTU (10 to 99.9 NTU), 1 NTU (100 to 1000 NTU)
- **Accuracy:** Reads within +/-2% of the displayed value or 0.02 NTU, (whichever is greater), with additional consideration of stray light across the entire range.
- **Repeatability:** Consistent readings of +/-1% of displayed value or 0.01 NTU, (whichever is greater).
- **Stray Light:** < 0.02 NTU
- **Temperature Compensation:** Get accurate results with ambient Temperature & LED Self Heating compensation.

### 3. Optics:

- **Detection:** Silicon Photodiode x 2 (90° scatter & 180° attenuated measurement)
- **Light Source:**  
For ISO7027: LED with wavelength of 860 nm (830 -890nm FWHM) for infrared light source  
For EPA 180.1: White LED light source
- **Response Time:** Quick response with <7 seconds for readings (in normal reading mode)

### 4. Power & Battery:

- **Power Supply:** Rechargeable lithium-ion cell for long lifespan, fast charging, and low maintenance, making it ideal for portable applications.
- **Battery Life:** 2500 sequential tests in one charge (full backlight & Wi-Fi Active)
- **Battery Health:** Retains 75% of original capacity after 500 charge cycles
- **Auto Off Feature:** Save battery life after finishing tests with programmable auto off
- **Compliance:** UL2054 & IEC62133
- **Charging Method:** USB Type C charging port (4 hours from zero to full charge)

### 5. Calibration & Check Standards:

- **Calibration Options:** Safe and non-hazardous solutions to ensure user health and safety. Three-point user calibration using SDVB calibration standards (For ISO variant 20 NTU, 100 NTU, 400 NTU, for EPA variant 20 NTU, 50 NTU, 400 NTU).
- **Check Standards:** Verify the calibration of the instrument in the field. Serial number certificate provided for check standards traceability. Includes 1 NTU calibration to verify the accuracy at lower range.

### 6. User Replaceable Optics:

- Ensure continuity in testing and minimise disruption with the replaceable optics that can be changed in the field. Available as a spare part.



## 7. Durability & Environmental Conditions:

- **Water Resistance:** Suitable for field use - IP67 waterproof rating (with lid open & closed both)- dust tight & water immersion resistant up to 1 meters for 30 minutes
- **Enclosure Rating:** IK08 rated for enhanced durability and impact resistance, ensuring long-lasting protection and performance in demanding environments.
- **Electrical Safety:** EN 61010 rated to ensure the safety for users in various environments, including industrial, laboratory, and testing settings, protecting against electrical hazards and mechanical risks.
- **Operating Temperature:** Wide operating range 0°C to 40°C (32°F to 104°F)
- **Humidity:** 0-90% at 30°C, non condensing
- **Storage Temperature:** -40°C to 60°C (-40°F to 140°F)

## 8. Data Storage & Transfer:

- **Data Logging:** 5,000 results in text log accessible via PC
- **Instrument Test Log:** Access at least 1,000 recent tests with detailed data tags (users, labels, notes etc.) on the instrument directly.
- **Connectivity:** USB-C and Wi-fi (for Data Transfer)
- **USB Port:** USB-C for direct data download to PC and charging
- **Cloud Storage:** Palintest Connect enabled to upload & view data remotely, register warranty, view instrument certificate.



## 9. Instrument Specifications & Functions:

- **Dimensions:** Compact size for portability (195 x 166 x 72 mm or 7.68" x 6.54" x 2.83" )
- **Weight:** Easily to carry - 650 grams
- **Material:** The extrusion consists of a blend of Acrylonitrile Butadiene Styrene (ABS), Polycarbonate (PC), and Thermoplastic Elastomer (TPE), while the Source of Illumination Chamber (SOC) is made of Polypropylene (PP) for its superior reflective properties.
- **Sample Cell & Volume:** Accommodates standard 25 mm diameter sample vials and requires only 10mL of sample for measurement.
- **User Interface:** Intuitive, multi-lingual on-screen instructions for a seamless user experience. Projected Capacitive Touch for use with wet and gloved hands.
- **Ambient Light Protection:** Closed cap design to minimize interference from external light during measurement.
- **Reading Mode:** Three modes to support various testing needs-  
Normal Mode: Reads turbidity in approximately 7 seconds  
Average Mode: Takes multiple measurements, averaging results for samples with changing turbidity  
Repeat Mode: Continuously measures turbidity and supports sample tube indexing.
- **Software Update:** Drag and drop firmware update capability.

## 10. Accessories Included:

- Protective, rugged carrying case
- Cleaning cloth for optics & test tube brush
- USB-C charging cable
- Silicone oil to improve reduce light scattering and ensure more consistent readings
- SDVB standards- 1NTU, 20NTU, 100NTU, 400NTU for ISO variant
- SDVB standards - 1 NTU, 20 NTU, 50 NTU, 400 NTU for EPA variant
- Spare kit available with replaceable optics, optics cover, screw & its cover

