

**Low Range/High Precision
Turbidity Meter
0-20 NTU**

860045
Instruction Manual

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Overview

This instrument combines the scattered light method and the transmitted light method, and uses a near-infrared light source to eliminate color interference, which conforms to the ISO7027 standard. There are two detectors: 90° and 180° in the instrument. The 180° detector receives the transmitted light, and the 90° detector receives the scattered light. The intensity of the scattered light and the transmitted light is positive to the turbidity in the sample. The intensity of light and transmitted light is used to calculate the turbidity value of the sample.

Overview (Continued)

This meter has the following features:

- * Built-in filter to avoid background light interference.
- * High-precision optical structure, accurate and stable measurement.
- * Built-in high-performance micro-processing core, high data processing power.
- * Easy to use, text on the screen indicates operation instructions.
- * IP65 protection grade, small size, light weight, dust-proof and shockproof.

Safety Precautions

Read the product manual before use and follow the instructions carefully. The colorimetric bottle of the standard solution can be directly used for calibration after being wiped with a soft towel. Do not open the cap. It is good practice to wear gloves, please wear protective glasses if necessary. If you come into contact with chemicals, clean them thoroughly with water immediately, and consult a doctor if necessary. Please understand the measurement procedure in detail and pay special attention to the hazard information. Failure to operate as required may injure the operator or damage the instrument. If you have questions about reagents or procedures, please contact our company.

Special reminder: Keep chemical reagents away from minors.

Safety Precautions (Continued)

Hazard information tips: If there are multiple hazards, this manual will use slogans (Danger, Warning, Caution) to try to avoid dangerous occurrences.

Danger: Indicates that there is a potentially dangerous situation. If it cannot be avoided, it may cause death or serious injury.

Warning: Indicates a potentially hazardous situation that may cause minor or moderate injury.

Note: Information that requires special attention. Warning label: Please pay special attention to the label attached to the instrument. If you do not pay attention, it may cause damage to the operator or the instrument.

Features

1. The use of near-infrared LED light source, low level interference, in line with ISO7027 standards.
2. OLED full color display screen, the data display is clear and contrasting.
3. The buttons and display screen are protected by acrylic panels.
4. The test results are automatically saved, and 5000 test results can be stored, so that historical data can be queried.
5. USB interface utilizes an anti-water design.
6. Supporting power management, the USB cable can be used for data transfer and battery charging.
7. The turbidity calibration solution can be stored at room temperature.

Features (Continued)

8. Support multi-point calibration.
9. One key “Restore the settings” function.
10. Special carrying case, dust-proof and shockproof.

Notice

1. When holding the bottle, please hold by the bottle cap, and do not touch the part below the line of the bottle with your hand.
2. Clean the test cuvette with a lens cleaning cloth before placing the bottle in the slot.
3. Keep the white bottle intact, without scratches, and clean inside and outside.
4. The silk screen "V" on the black bottle should be aligned with the "Λ" on the edge of the black groove.
5. During the testing, there must be no bubbles on the inner wall of the white bottle, otherwise the measurement accuracy will be affected, and the bubbles can be discharged by tilting slightly.

Notice (Continued)

6. When recalibrating, it is necessary to place the standard solution strictly according to the instructions on the interface. The four calibration points of 0/1/2/20NTU must be calibrated.
7. Please put on the shading cover before testing.
8. Avoid any liquid or foreign objects entering the detection tank. After use, please cover the rubber sealing plug in time, and pay attention to the direction of the sealing plug (the arrow of the sealing plug is in the same direction as the arrow of the instrument logo).

The illustrations are for reference only.

Parts & accessories

1) Shading cover

2) Display Screen

3) Buttons

4) USB

5) Cuvette

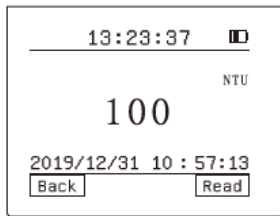
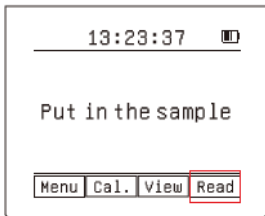
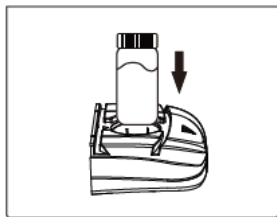
6) Colorimetric Tube

7) Rubber seal plug



Measurement steps

- 1) Open the colorimetric tube and fill with 10ml or more of the solution being tested, trying to avoid air bubbles.
- 2) Close the colorimetric tube and wipe clean with a soft cloth.
- 3) Remove the shade cover and rubber seal plug from the meter and place the colorimetric tube in to the test cuvette, then place the shade cover over the colorimetric tube.
- 4) Power on the meter, then press “Read” to start the test.
- 5) Once complete, the test reading will be displayed. Press “Back” to return to the main menu.



Calibration steps

- 1) Power on the meter, then press “Cal.” to start the calibration process. Press “OK” to continue with the calibration or “BACK” to cancel.
- 2) The display will highlight the current calibration standard required. Insert the required NTU calibration standard in to the colorimeter tank. Place the shade cover over the colorimetric tube then press “READ” to start the calibration.
- 3) Repeat step 2 for each highlighted calibration standard.
- 4) Once all calibration standards have been processed, press “OK” to complete the calibration and return to the main screen. Press “SHIFT” to switch back to a different calibration standard.
- 5) Once complete, the test reading will be displayed. Press “Back” to return to the main menu.

Other operations

Test records

Connecting the instrument to a computer with a USB data cable, the computer will automatically recognize the instrument and display the drive “Z10A” on the computer. The test records are saved in the “Record” folder.

“CalibrateRecord.csv” is the calibration data log.

“DetectionRecord.csv” is the measurement data log.

You can double-click to open and view the details, or copy the data to your computer.

Note: Do not delete the two program files under the Z10A/App file.

Technical specification

Model	Z10A (0-20 NTU)
Measure Range	0 - 20 NTU
Resolution	0.01/0.1/1.0 NTU
Accuracy	± 0.1 NTU or $\pm 5\%$ NTU
Repeatability	± 0.1 NTU @ < 10 NTU; $\leq \pm 1\%$ @ ≥ 10 NTU
Zero Drift	$\leq \pm 0.1$ NTU
Operating Temp	5 - 40°C
Storage Temp	-10 - 55°C
Humidity	0-80% RH
Power	Lithium Battery
Calibration	Max 4 point Calibration
Protection Class	IP65
Dimension	170X72X44mm
Weight	290g

Warranty:

Sper Scientific warrants this product against defects in materials and workmanship for a period of one (1) year from the date of purchase, and agrees to repair or replace any defective unit without charge. If your model has since been discontinued, an equivalent Sper Scientific product will be substituted if available. This warranty does not cover sample vials, batteries, battery leakage, or damage resulting from accident, tampering, misuse, or abuse of the product. Opening the meter to expose its electronics will void the warranty. To obtain warranty service, ship the unit postage prepaid to:

SPER SCIENTIFIC LTD.
8281 E. Evans Rd., Suite #103
Scottsdale, AZ 85260
(480) 948-4448

The defective unit must be accompanied by a description of the problem and your return address. Register your product online at www.sperwarranty.com within 10 days of purchase.

Please note: The most current version of the manual can always be found at www.sperdirect.com