LaMotte 2020t

LaMotte 2020t Turbidity Meter User Manual

Model: 2020t | Brand: LaMotte

1. Introduction

This manual provides detailed instructions for the proper setup, operation, and maintenance of the LaMotte 2020t Turbidity Meter. Adhering to these guidelines will ensure accurate measurements and extend the lifespan of your instrument. Please read this manual thoroughly before using the device.

2. Product Overview and Features

The LaMotte 2020t Turbidity Meter is designed for precise turbidity measurements in various applications, including natural waters, mid-range industrial processes, and high-range environmental analysis. It is an advanced replacement for the 1970-ISO model.

Figure 2.1: The LaMotte 2020t Turbidity Meter handheld device, displaying a digital reading and control buttons.

Key Features:

- **2020t Version:** Optimized for natural waters, mid-range industrial applications, and high-range environmental applications.
- **ISO 7027 Compliance:** Meets design criteria for quantitative methods of turbidity using optical turbid meters as specified by ISO 7027, making it suitable for colored or extremely turbid samples.
- **USB Port:** Equipped with a USB port for data transfer and connectivity.
- **Replacement Model:** Serves as a direct replacement for the 1970-ISO model.

What's in the Box:

Figure 2.2: The complete LaMotte 2020t Turbidity Meter Kit, including the meter, carrying case, sample cells, and calibration standards.

The LaMotte 2020t Turbidity Meter KIT typically includes:

- LaMotte 2020t Turbidity Meter
- Carrying Case
- Sample Cells
- Calibration Standards (e.g., 0.02 NTU, 1.0 NTU, 10.0 NTU)
- USB Cable
- Power Adapter
- Instruction Manual

3. Safety Guidelines

Observe the following safety precautions to prevent injury and damage to the instrument:

- Always handle the meter and reagents with care.
- Do not immerse the meter in water or other liquids.

- Use only the specified power adapter and USB cable.
- Avoid dropping or subjecting the meter to severe impact.
- Keep the instrument away from strong magnetic fields and extreme temperatures.
- Ensure proper ventilation when operating in enclosed spaces.
- Dispose of reagents and samples according to local regulations.

4. Initial Setup

4.1 Unpacking and Inspection

1. Carefully remove all components from the packaging.
2. Verify that all items listed in the "What's in the Box" section are present.
3. Inspect the meter and accessories for any visible damage. If damage is found, contact LaMotte customer support immediately.

4.2 Powering the Meter

The 2020t Turbidity Meter can be powered via its internal rechargeable battery or directly through the provided power adapter.

- **Battery Charging:** Connect the power adapter to the meter's charging port and plug it into a standard electrical outlet. The battery indicator on the display will show charging status.
- **Initial Charge:** It is recommended to fully charge the battery before first use.

4.3 Calibration

Regular calibration ensures the accuracy of your turbidity measurements. Use the provided calibration standards.

1. Turn on the meter by pressing the **POWER** button.
2. Access the calibration menu (refer to the on-screen prompts or specific section in the full manual for navigation).
3. Insert the lowest NTU standard (e.g., 0.02 NTU) into the sample compartment, ensuring the cell is clean and free of air bubbles.
4. Follow the on-screen instructions to perform the calibration for each standard, progressing from lowest to highest NTU value.
5. Confirm calibration completion.

5. Operating Instructions

5.1 Taking a Turbidity Measurement

1. **Prepare Sample Cell:** Ensure the sample cell is clean, dry, and free of scratches. Fill the cell with the sample to be tested, avoiding air bubbles.
2. **Insert Sample Cell:** Place the prepared sample cell into the meter's sample compartment, aligning any marks as indicated by the instrument.
3. **Select Measurement Mode:** If applicable, select the desired measurement mode (e.g., single reading, average) using the navigation buttons.
4. **Initiate Measurement:** Press the **ENTER** or **SCAN SAMPLE** button to begin the measurement.
5. **Read Result:** The turbidity reading in NTU (Nephelometric Turbidity Units) will be displayed on the screen.
6. **Record Data:** Manually record the reading or utilize the data logging features if available.

5.2 Using the USB Port

The integrated USB port allows for data transfer to a computer or for firmware updates.

- Connect the meter to a computer using the provided USB cable.
- The meter may appear as a removable storage device or require specific software (refer to LaMotte's website for software downloads).
- Follow the software instructions to download stored data or update firmware.

6. Maintenance

6.1 Cleaning the Meter and Sample Cells

- **Meter Exterior:** Wipe the exterior of the meter with a soft, damp cloth. Do not use abrasive cleaners or solvents.
- **Sample Cells:** Clean sample cells thoroughly after each use. Rinse with distilled or deionized water and dry with a lint-free cloth. Avoid scratching the cell surfaces, as this can affect readings.
- **Sample Compartment:** Keep the sample compartment clean and free of dust or spills. Use a soft brush or compressed air if necessary.

6.2 Storage

When not in use, store the LaMotte 2020t Turbidity Meter in its protective carrying case in a cool, dry place, away from direct sunlight and extreme temperatures. Ensure the battery is partially charged if storing for extended periods.

7. Troubleshooting

Problem	Possible Cause	Solution
Meter does not power on	Low or depleted battery; Power adapter not connected	Charge the battery; Ensure power adapter is securely connected.
Inaccurate or inconsistent readings	Dirty or scratched sample cell; Air bubbles in sample; Meter out of calibration; Sample not properly mixed	Clean sample cell; Remove air bubbles; Perform calibration; Ensure sample is homogeneous.
USB data transfer failure	Incorrect cable; Driver issues; Software not installed	Use original USB cable; Install necessary drivers/software from LaMotte website; Try a different USB port.

If you encounter problems not listed here, or if solutions do not resolve the issue, please contact LaMotte customer support.

8. Technical Specifications

- **Model Number:** 2020t
- **Measurement Principle:** Nephelometric (ISO 7027 compliant)
- **Light Source:** Tungsten lamp
- **Interface:** USB port
- **Power:** Internal rechargeable battery, AC adapter

- **Dimensions (Approx.):** Refer to product packaging for exact dimensions (e.g., 17.32 x 12.72 x 4.76 inches)
- **Weight (Approx.):** Refer to product packaging for exact weight (e.g., 1 Pound)
- **Manufacturer:** LaMotte
- **First Available:** March 14, 2019

9. Warranty and Customer Support

LaMotte products are manufactured to high-quality standards. For information regarding warranty coverage, please refer to the warranty card included with your product or visit the official LaMotte website. For technical assistance, replacement parts, or service inquiries, please contact LaMotte customer support directly.
You can find more information about LaMotte products and support on their official Amazon store page: LaMotte Amazon Store.