



SURFACE WATER QUALITY STEWARDSHIP TOOLBOX

Quick Reference LaMotte 2020we Turbidity Meter Calibration

Perform a calibration within 24 hours before a site visit

This is an example of calibration instructions of one specific model of turbidity meter (i.e., LaMotte 2020we). ENV has summarized quick reference information to show a calibration procedures example.

Always refer to the manual that came with your instrument for detailed calibration and instrument care instructions.

The LaMotte 2020we portable meter allows you to calibrate for expected higher and lower turbidity readings. The 1 NTU calibration standard should be used for expected low turbidity (usually low flows where no disturbance has occurred or during higher flows when rainfall has not occurred in the last 48 hours, waters visually appear clear). 10 NTU should be used for expected high turbidity (storm events or upstream disturbances, water visually can appear cloudy or clear). If you reach a site where low turbidity was expected but water appears cloudy or disturbed, a recalibration with the 10 NTU standard is recommended.

1. To guarantee reading quality ALWAYS:
 - a. **Ensure meter lid is CLOSED when not inserting or removing a vial** to prevent dust or debris from entering the chamber.
 - b. Ensure to NEVER touch the inside of the light chamber, as oil marks can interfere with the reading.
 - c. Ensure water droplets do not get into the light chamber, as this can interfere with the reading.
 - d. Ensure the vial in use is wiped SPOTLESSLY clean using a clean KimWipe only (do not use anything abrasive or with lint as scratches or dust will interfere with the reading).
 - e. Align the white vertical line on every vial placed in the light chamber with the triangular marker at the front of the chamber.
2. Turn on, select **MEASURE**, then **Turbidity with Blank**.
3. Place vial of 0 NTU standard in chamber (wipe clean and align vial).

4. **Scan Blank** then **Scan Sample** (for blanking, always do both in order) until unit reads between 0.00 NTU and -0.04 NTU. Note in calibration log how many tries this took.
5. Remove 0 NTU solution vial and insert 1 NTU solution vial (wiped clean and aligned with chamber).
6. **Scan Sample** three times, opening the lid and removing the vial (without touching the glass) and reinserting it into the chamber between each scan. Record the third scan value as the pre-calibration reading.
7. After the third reading, scroll down using the arrow keys to **Calibrate**. Select and press **Enter**.
8. The numbers will be highlighted. Use the up and down arrow keys to change the number values so it reads the same as the solution being calibrated. If the meter gives “Out of Range” message when you change the number, start over at Step 2.
 - a. If this does not work after several attempts, go to the first page of the meter menu, scroll down and select **options** and then select **factory reset** (to restore factory settings); repeat steps 2 through 8 until it reaches 1.00 (or the exact value of the calibration standard you are using). If this doesn’t work, the calibration standards need to be replaced or the unit needs maintenance, contact your project authority for support or a replacement meter ASAP.
9. When the value on the display matches the concentration of the turbidity standard, select **Set Calibration**, then **Enter** to return to turbidity measurement screen. The post-cal reading should be the same as the solution being calibrated, record this value in your calibration log.
10. Proceed with protocols for analyzing a sample.