NanoDrop Lite Plus maintenance instructions

Introduction

Recommended Schedule: Every 6 months

A vial of PV-1 {aqueous nicotinic acid (C6H5NO2), potassium nitrate (KNO3)}, is required to verify the performance of the pedestal of the Thermo Scientific™ NanoDrop™ Lite Plus Microvolume UV Spectrophotometer.

Materials needed for diagnostics

- Lint-free Laboratory Wipes.

Materials needed for performance verification

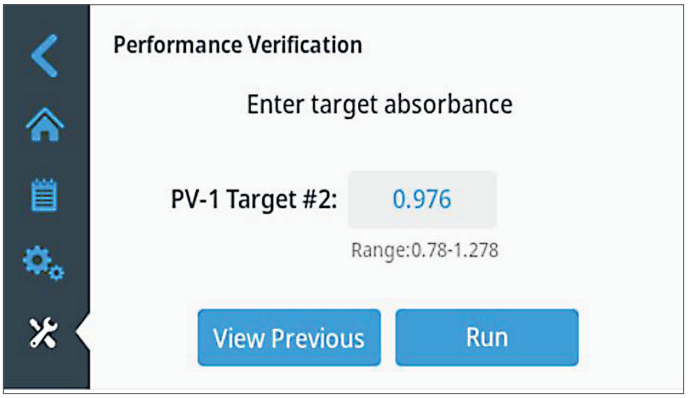
- Lint-free Laboratory Wipes
- Deionized Water (diH_2O)
- Calibrated Precision Pipettor (0.2-2 µL)
- PV-1 Solution {aqueous nicotinic acid ($C_5H_5NO_2$), potassium nitrate (KNO_3)}

Ensure pedestals are clean and conditioned

1. Clean both upper and lower pedestal surfaces using a dry, lint-free laboratory wipe.
2. Pipette 1 µL diH_2O onto lower pedestal surface and visually inspect droplet. If pedestal surface is properly conditioned, water sample will “bead up”.

Note: When the hydrophobic properties of the pedestal surfaces have become compromised the droplet will “flatten out”, refer to the Pedestal Reconditioning procedure located in the **Maintenance** chapter of the NanoDrop Lite Plus User Guide to recondition the pedestals prior to the Performance Verification.

3. Remove the water sample from the upper and lower pedestal surfaces with a dry laboratory wipe.



Performance verification procedure

1. From the Home Screen, tap the **Maintenance** icon, followed by **Performance Verification**.
2. Tap on the PV-1 Target #2 entry box to display a numerical keypad.
3. Enter Target Absorbance **#2** (found on the PV-1 ampoule label) in the **PV-1 Target #2** entry box (see example in previous column).

Note: Target absorbance values are **lot specific**.

4. Once the target values have been entered, tap **Run**.
5. Pipette 1 µL diH_2O onto lower pedestal, lower arm, and tap **Blank**.
6. After the blank is complete, remove water from upper and lower pedestal surfaces using a clean, dry laboratory wipe.
7. Ensure PV-1 solution is thoroughly mixed by vigorously shaking the ampoule. Allow solution to collect at the bottom portion of the ampoule, if needed gently tap the ampoule.
8. Carefully snap off top portion of ampoule using ampoule cracker, discard top along with ampoule cracker (use proper safety precautions for disposal).
9. Withdraw 1 µL of the PV-1 solution from the ampoule, pipette onto lower pedestal, lower arm, and tap **Measure**.
10. After the measurement is complete, remove sample from both upper and lower pedestals using a dry laboratory wipe.
11. Repeat steps 9 and 10 to measure 9 additional replicates of the PV-1 solution (following the on-screen prompts).
    a. Always use a fresh 1 µL aliquot of PV-1 for each measurement.
    b. In between each measurement, remove PV-1 solution from both pedestals using a dry laboratory wipe.
12. After each measurement is complete, the individual results will be displayed on screen and subsequently added to the existing results.
13. After ten replicates have been measured, a summary of the performance check results will be displayed on screen.

14. To clean the pedestals after the Performance Verification is complete, pipette 5 µL diH_2O onto the lower pedestal, lower arm to allow the diH_2O to contact the top pedestal surface and let sit for 30 seconds.
15. Remove the diH_2O from the upper and lower pedestals using a dry laboratory wipe.

Interpreting results

1. Results will display as a Pass or Fail.
2. If you don't receive a Pass result, repeat the procedure using 2 µL aliquots of PV-1 to ensure environmental conditions did not cause the Fail.

Note: Due to concentration changes from evaporation, PV-1 must be used within one hour of opening.

3. Click the **Close** button when done.
   a. Results can be exported and printed at this time or later from the Performance Verification screen by tapping **View Previous** 

Pathlength accuracy – %error		
Pathlength	Pass	Fail
1.0 mm	≤ 3%	> 3%
0.2 mm	≤ 5%	> 5%
Pathlength repeatability – %CV		
Pathlength	Pass	Fail
1.0 mm	≤ 5%	> 5%
0.2 mm	≤ 10%	> 10%

Diagnostics procedure

1. From the Home Screen, tap the **Maintenance** icon  , followed by Diagnostics.
2. Clean the upper and lower pedestals using a clean, dry laboratory wipe.
3. Lower the arm and tap **Run**.

Interpreting results

1. The results will display as green checkmarks for parameters that Pass and a red "X" icon will indicate any Fail results (see example below).

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