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| NanoDrop OneC Instrument Maintenance and Troubleshooting | | | | |
| **Purpose** | This procedure provides instructions related to function and maintenance of the NanoDrop OneC Spectrophotometer. | | | |
| **Policy Statements** | This procedure applies to technical staff performing testing on the NanoDrop OneC. | | | |
| **Special Safety Precautions** | Microbiologists/virologists are subject to occupational risks associated with specimen handling. Refer to the safety policies located in the safety section of the *Microbiology*and *Virology Policy Manual***:**   1. *MB 2.02 Biohazard Containment* 2. *Safety in the Microbiology/Virology Laboratory*  * *Biohazardous Spills* | | | |
| **Materials** | |  |  |  | | --- | --- | --- | | Reagents | Supplies | Equipment | | * Deionized water * NanoDrop Pedestal Reconditioning Compound (PR-1) * Glass LCD cleaner * Household blech (diluted 1:10 with water) or Bleach Wipes * 70% alcohol * PV-1 Performance Verification Solution | * Lint-free laboratory wipes * Lint-free cloth (microfiber) * Laboratory Gloves | * Canned Air * Calibrated precision pipettor (0 – 2 µl) | | | | |
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| **Procedure** | **Daily / With Use Maintenance:**  **Clean the Pedestals –** Refer to **Figure 1** below   1. Clean before the first blank or sample and at the end of each measurement. 2. Lift the instrument arm and clean the upper and lower pedestal with a new laboratory wipe between measurements. 3. To clean between users, lift the arm and clean both pedestals with a new laboratory wipe. 4. Pipette 3 – 5 µl DI H2O onto the lower pedestal.   **NOTE:** Do not use a spray bottle.   1. Lower the arm and wait 2 – 3 minutes. 2. Lift the arm and clean both pedestals with a new wipe.   **Figure 1:** Cleaning the Pedestals    **Cleaning the Touchscreen**   1. Gently wipe the touchscreen with a soft, lint-free cloth such as a Kim Wipe.   **NOTE:** Do not use paper towels or spray liquid on the touchscreen. You may use a cleaner intended for glass LCD displays if necessary.  **6 Month Maintenance**  **Reconditioning the Pedestals**  Use the NanoDrop Pedestal Reconditioning Compound (PR-1) as a rapid means of reconditioning the pedestals when the surface properties have been compromised and liquid columns break during measurement (see **Figure 2**). This restores the pedestals to a hydrophobic state to achieve surface tension for accurate measurement. See **Figure 3**.  **Figure 2:** Unconditioned and Conditioned Pedestals    **Figure 3:** NanoDrop Pedestal Reconditioning Kit     1. Open the PR-1 compound and use the applicator provided to remove a pin-head sized amount. 2. Apply a thin, even layer of reconditioning compound to the surface of the upper and lower pedestal (see **Figure 3**). 3. Wait 30 seconds for PR-1 to dry. 4. Fold a clean laboratory wipe into quarters and use it to vigorously buff the surface of each pedestal. Black residue on the wipe is normal. Support the instrument arm with one hand while you buff the upper pedestal. 5. Repeat Step 4 with a new folded wipe until all residue is removed and the pedestals buff clean. 6. Use canned air to remove any paper residue from the pedestals. 7. Pipette 1 µl DI H2O onto the lower pedestal to ensure it beads up to form a rounded droplet.   **Decontamination**  Decontaminate the instrument after measuring samples that contain hazardous materials and before shipping the instrument for maintenance or repair.   1. Lift the arm and clean the upper and lower pedestals with a new laboratory wipe. 2. Pipette 2 – 3 µl 1:10 diluted bleach solution onto the lower pedestal. 3. Lower the arm and wait 2 – 3 minutes. 4. Lift the arm and clean both pedestals with a new wipe. 5. Pipette 3 – 5 µl DI H2O onto the lower pedestal. 6. Lower the arm and wait 2 – 3 minutes. 7. Lift the arm and clean both pedestals with a new wipe. 8. Dampen a laboratory wipe with the diluted bleach solution and use it to gently wipe the outside surfaces of the instrument. 9. Dampen a laboratory wipe with DI H2O to remove the bleach solution.   **Intensity Check**  Run Intensity Check to verify operation of the internal components.   1. Lift the arm and clean the upper and lower pedestal with a new laboratory wipe. 2. Remove cuvettes from cuvette holder, if necessary. 3. Lower the arm. 4. Tap Diagnostics from the home screen and then tap Intensity Check. 5. Tap Measure and wait for the measurements to complete. To rerun, tap measure again. 6. When finished tap End Experiment. 7. If UV, Visible, or Bias has a yellow triangle instead of a green check mark, clean the pedestals with DI H2O and then repeat the Intensity Check. Also ensure the room temperature is within specifications for the instrument. 8. If the Intensity Check fails again, contact technical support.   **Performance Verification**  Run Performance Verification to confirm pathlength accuracy is within specifications.   1. Ensure pedestal conditioning is okay by adding 1 µl DI H2O onto the lower pedestal and ensuring it beads up. If it does not, recondition both pedestals. 2. Tap Diagnostics from the home screen and then tap Performance Verification. 3. Enter lot-specific target absorbance value from the label on the PV-1 ampoule in the appropriate boxes on the pop up message. Then tap done. 4. Lift the instrument arm and clean the upper and lower pedestal with a new laboratory wipe. 5. Pipette 1 µl DI H2O onto the lower pedestal, lower the arm and tap Blank. 6. Lift the arm and clean both pedestals with a new wipe. 7. Vigorously shake the PV-1 ampoule and then allow the liquid to collect in the bottom before opening it. 8. Pipette 1 µl PV-1 solution on the lower pedestal and start the measurement by lowering the arm and tapping Measure. 9. Repeat Step 8 nine more times using a new 1 µl aliquot for each measurement and cleaning both pedestals after each measurement. 10. After the 10th measurement, a message will indicate whether the performance verification passed or failed. 11. If it failed, repeat Step 8 using 2 µl aliquots of PV-1. 12. When finished, tap End Experiment and clean the pedestals with 3 – 5 µl DI H2O. 13. Contac technical support if using 2 µl aliquots of PV-1 after a failed performance verification.   **Pedestal Image Check**  Run the Pedestal Image Check periodically to verify the instrument’s column sensor which monitors for possible errors.   1. Lift the arm and clean the upper and lower pedestals with a new laboratory wipe. 2. Lower the arm. 3. Tap Diagnostics from the home screen and then tap Pedestal Image Check. 4. Tap Measure. A green check mark indicates the instrument passed after running the tests. 5. Tap End Experiment. 6. If it failed and presented a yellow triangle instead of the green check mark, follow on-screen instructions to fix any possible problems then rerun the Pedestal Image Check. If it fails again, contact technical support.   **Customer and Technical Support**  For Technical Support contact Thermo Fisher Scientific at 302-479-7707 or nanodrop@thermofisher.com. | | | |
| **Result Reporting** | Record completion of maintenance tasks on the NanoDrop OneC Maintenance Log. | | | |
| **References** | 1. Thermo Scientific NanoDrop Micro-UV/Vis Spectrophotometers NanoDrop One User Guide. May 2017. Wilmington, DE 19810 | | | |
| **Historical Record** |  |  |  |  |
|  | **Version** | **Written/Revised by:** | **Effective Date:** | **Summary of Revisions** |
| 1 |  | 04.16.2018 | Initial Version |
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