Frequently Asked Questions

Q: What are the sample size requirements for the NanoDrop Lite?

A: Although 1 ul volumes are usually sufficient for most sample measurements, increasing the sample size to 2 ul will ensure proper column formation for samples with reduced surface tension properties.

Q: Will the sample size affect the concentration results?

A: No. All calculations are volume independent. Sample concentrations for all applications are calculated using the Beer-Lambert equation, which relates concentration to absorbance using analyte and wavelength specific extinction coefficients or conversion factors.

Q: What pathlengths are used to make measurements and is the user required to make any calculations relevant to the pathlength?

A: The NanoDrop Lite uses a 0.5 mm pathlength and all reported concentration results have taken into account the pathlength. The absorbance reported for all measurements is normalized to a 10 mm pathlength.

Q: What types of samples can be measured with the NanoDrop Lite?

A: The NanoDrop Lite is designed to measure the absorbance and calculate the concentration of nucleic acids (260 nm) and purified proteins(280 nm). This would include dsDNA, ssDNA, RNA and purified proteins.

Q: Do nucleic acids require purification prior to measurement?

A: Yes. Absorbance measurements are not specific for a particular sample type. Any analyte that absorbs at 260 nm (DNA, RNA or free nucleotides) will contribute to the total absorbance of the sample.

Q: What sort of reproducibility and dynamic range should I expect when measuring nucleic acids with the NanoDrop Lite?

A: The dynamic range depends on the nucleic acid being measured. Refer to the NanoDrop Lite User Guide for more information on dynamic range and expected reproducibility.

Q: Do proteins require purification prior to measurement on the NanoDrop Lite?

A: Yes, making absorbance measurements will be affected by the presence of non-protein molecules which absorb at 280 nm. The NanoDrop Lite is not designed to measure non-purified proteins and it does not measure the A280/A260 purity ratio for proteins.

Q: What is the dynamic (concentration) range and reproducibility for proteins on the NanoDrop Lite?

A: The dynamic range depends on the assay type selected for the protein being measured. Choices are 1A/cm = 1 mg/ml, IgG or BSA. Refer to the NanoDrop Lite User Guide for more information on dynamic range and expected reproducibility.

Q: Can I use colorimetric methods such as Bradford or Pierce 660 with the NanoDrop Lite to determine the total protein concentration in samples such as cell lysates?

A: No. The Protein A280 application of the NanoDrop Lite is designed for measuring purified proteins that absorb at 280nm. Calculations are based upon Beer's Law, using a protein specific extinction coefficient. Colorimetric assays require standard curve generation and absorb light at wavelengths other than 280 nm. If you are currently using a colorimetric assay to measure proteins, it is recommended that you use one of the preprogrammed colorimetric methods available on the NanoDrop 2000/2000c.

Q: Is simply wiping the pedestal surface adequate to prevent sample carryover?

A: Yes. The highly polished quartz stainless steel surfaces of the sample retention system are resistant to sample adherence. Wiping with dry lint-free lab wipes remove samples very effectively. However, if a sample is left to dry on the pedestal, more extensive cleaning is required. Refer to the technical document, *Cleaning and Reconditioning for the NanoDrop Lite*, for additional information.

Q. How do I clean the pedestals?

A: An application of water at the end of a measurement session is generally all that is necessary to keep the measure surfaces clean and conditioned. If additional cleaning is required, refer to the technical document, *Cleaning and Reconditioning for the NanoDrop Lite*, for additional information. Do not use detergents or isopropanol as cleaning agents as their use may result in the pedestals becoming unconditioned.

Q: How do I keep my sample from spreading on the pedestal?

A: There are many reagents and organic solvents that could compromise the pedestal surface properties, causing samples to flatten out rather than bead up. Use the NanoDrop PR-1 reconditioning compound as a rapid means of reconditioning the pedestals when the pedestal surface properties have been compromised and samples spread out on the pedestal. PR-1 kits are available through Thermo Fisher Scientific or your local distributor.

Q: What is an appropriate blanking solution?

A: The blanking solution should always be the solvent or buffer used to dissolve the sample, at the same pH and ionic strength.

Q: Why do I have negative absorbance values?

A: A blank measurement was made either using a solution with more absorbance than the sample buffer or on a dirty pedestal. Clean the pedestal and make a new blank measurement with a fresh aliquot of the appropriate buffer.

Q: Where is the spectrum from my measurement?

A: The NanoDrop Lite does not collect spectral data. It measures absorbance at three different wavelengths: a reference wavelength, 260 nm and 280 nm.

Q. What information is included in the sample output data?

A. The sample output data includes sample number (auto-generated 1 through 500), time/date of measurement, analyte being measured, absorbance (A260 or A280), and concentration. In addition, the 260/280 purity ratio is supplied for nucleic acid measurements.

Q: What happens to sample data if it does not get transferred to a USB device at the time the measurement is made?

A: Data from each measurement is automatically saved in the instrument memory and can be transferred to a memory device at a later time. Data for up to 500 measurements are stored in the NanoDrop Lite memory. Once 500 measurements have been stored in memory, measurement #501 data will overwrite the measurement #1 data.

Q. How do I view previous measurements stored in the instrument?

A. Use Sample History under the Tools and Settings menu to view or print previous measurements.

Q: Does the NanoDrop Lite require a computer to operate?

A: No, the NanoDrop Lite instrument is a standalone unit with local control. Data can be saved to a memory device and transferred to a computer.

Q: Can I connect my computer to the NanoDrop Lite?

A: No. The NanoDrop Lite cannot be connected to a PC. The NanoDrop Lite is a local control instrument running pre-loaded applications

Q: How do I check the accuracy of the NanoDrop Lite?

A: By using the NanoDrop Calibration Check Fluid(CF-1) to perform a calibration check. CF-1 is prepared from the NIST potassium dichromate standard SRM935 in acidified reagent grade water.

Q: How often do I need to check the calibration of the NanoDrop Lite?

A: We recommend confirming that the instrument is working within specifications every 6 months. The Thermo Scientific Calibration Check Fluid (CF-1) is required to run the calibration check procedure. CF-1 is available from Thermo Fisher Scientific or one of its authorized distributors.

Q: How long before I need to replace the light source in the NanoDrop Lite?

A: The LEDs are expected to last for the lifetime of the instrument.

Q: Are the LEDs continuously on, or only when performing a measurement?

A: The LEDs are only on during measurements.

Q: Are there solvents that will damage the pedestal measurement surfaces?

A: The NanoDrop Lite measurement pedestals are compatible with most solvents typically used in a life science laboratory. Wipe dilute acids from the pedestal surfaces immediately after a measurement is complete to ensure the pedestal surfaces stay conditioned. Only hydrofluoric acid (HF), in any form, will damage the pedestal by dissolving the quartz fiber optic cable. Do not use hydrofluoric acid on the pedestal. Refer to the technical document, *Solvent Compatibility and Utility* for additional information