



## Technical Note 123

# Microvolume Pathlength Verification Protocol

## Introduction

The DeNovix DS-11 Spectrophotometer utilizes a proprietary SmartPath™ technology to automatically adjust the microvolume mode pathlengths.

Although routine calibration is not necessary, the following LC-NA reagent may be used with the specified protocol below to confirm that the instrument is performing within specifications.

## Reagents

DeNovix cat #LC-NA is an aqueous nicotinic acid standard used to verify that the microvolume pathlengths are within specifications. SDS and pricing in the US are available at [denovix.com/accessories](http://denovix.com/accessories), or contact your distributor for pricing if outside the US.

- Always use a fresh vial for each verification check procedure.
- The LC-NA solution is supplied in a single use ampule that should be used immediately upon opening.
- Significant changes in concentration and possible verification check failures may occur if the vials are opened for longer than 1 hour prior to use.
- Only the LC-NA standard from DeNovix and its authorized distributors should be used for the verification check.
- No other sources of nicotinic acid are tested and validated for use with the DS-11 verification check procedure.
- The solution is light sensitive. Store unopened ampules in a dark, dry and well-ventilated area

## Protocol

1. Clean both sample measurement surfaces. Pipette 2 – 3  $\mu\text{L}$  of dH<sub>2</sub>O onto the bottom sample surface. Lower the upper arm and wait 1 minute. Wipe away the water from both the upper and lower sample surfaces with a dry, lint-free lab wipe.  
Note: Do not use a spray bottle to apply water or any other solutions onto any surface of the instrument; the liquid may damage internal components.
2. Launch the Diagnostics app and navigate to the Verification tab.
3. Enter the lot specific Target Absorbance stated on the ampule label in the appropriate field.
4. Add 1  $\mu\text{L}$  of dH<sub>2</sub>O to the pedestal, lower the arm and tap Blank.
5. Wipe the upper and lower pedestals using a dry laboratory wipe.
6. Vigorously shake the nicotinic acid vial to thoroughly mix the solution. Ensure that all of the solution is in the bottom portion of the vial before opening the vial.
7. Pipette 1  $\mu\text{L}$  of the solution onto the sample surface, lower the arm and tap Measure.
8. Wipe the sample off of both the top and bottom sample surfaces.
9. Using fresh aliquots, repeat steps 7 and 8 for a total of five measurements.

## Troubleshooting

### Low Absorbance Values

Dirty measurement surfaces or improper blank:

- *Clean the surfaces, measure a new Blank using fresh source of dH<sub>2</sub>O and restart the procedure using a new vial of solution.*

### High Absorbance Values

Multiple measurements made using the same aliquot:

- *Use a fresh aliquot for each measurement.*

Pipette tips not changed between aliquots:

- *Use a fresh tip to pipette each aliquot onto the sample surface.*

The sample surfaces are not adequately cleaned between measurements:

- *Between aliquots, wipe both the top and bottom surfaces with a dry lab wipe.*

The solution has concentrated due to prolonged exposure:

- *Use a fresh vial of solution.*

### **High Variability in Replicates**

Multiple measurements made using a single aliquot:

- *Use a fresh aliquot for each measurement.*

Pipette tips not changed between aliquots:

- *Use a fresh tip to pipette each aliquot onto the sample surface.*

The sample surfaces are not adequately cleaned between measurements:

- *Clean both the top and bottom surfaces between measurements.*

## **Results**

Screen captures of the results may be exported via email, saved to a USB device or printed to an approved DeNovix accessory printer.

## **Summary**

If technical support is required, please email a screen capture of the results to [techsupport@denovix.com](mailto:techsupport@denovix.com) or call us at +1 302.442.6911.

- Please include the serial number of your unit and provide your full contact information (email address and phone number) in the body of the email.
- Please note that responses will not be sent to the email account used by the instrument.
- If contacting us by phone, please have the replicate values handy as we will ask for that information to expedite the troubleshooting process.

Outside of the US, please contact your local distributor for assistance.

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